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Robert Keate
1858.

F. G. Coleridge
from R. W. Keate.
November 1881.

TRINIDAD:

Its Geography,

NATURAL RESOURCES, ADMINISTRATION, PRESENT CONDITION, AND PROSPECTS.

BY

L. A. A. DE VERTEUIL, M.D.P.

"The softness and purity of the climate, and the verdure, freshness, and sweetness of the country, appeared to Columbus to equal the delights of early spring in the beautiful province of Valencia, in Spain."—*Washington Irving*, book x., ch. ii.

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DEDICATION.

To the Natives of Trinidad.

In dedicating this production to you, my countrymen, I can truly say with Montaigne—" C'est icy un livre de bonne foy, lecteur." I am, therefore, anxious that you should find it truthful, if not as interesting or valuable as it might, under other auspices, have been. And yet, it cannot be reasonably expected that, in treating so many and such various subjects, no errors should have crept in; this much, however, I can say—they are not wilful errors.

With all the drawbacks, however—for which I crave your indulgence—I am confident you will find in the work itself, material evidences of the great importance of Trinidad in an agricultural as well as a commercial point of view. Numberless, varied, and more than competent are its resources, but they remain undeveloped still; and it assuredly, in a great measure, depends on *you* to render them available, by cheerfully and unhesitatingly throwing off the lethargy of inaction, by resolutely girding yourselves for the arduous enterprise, and by putting forth, in unity of faith and purpose, the collected might, the energy, the perseverance, of a people resolved to yield to no obstacles, and to halt at no issue short of complete and triumphant success.

That many obstacles naturally exist, that many have been

wantonly cast in the way, I have admitted and shown; I have also endeavoured to point out such as can be traced to the influence of former social institutions. Nevertheless, on a careful review of our present social condition, you have no cause for despondency; but let my earnest advice prevail with you to sever all connection with the past by a steady advance in moral and industrial improvement; or if the events of the past cannot but be reverted to, if its trials and struggles, its sufferings and humiliations will, of necessity, intrude—let them rather serve as beacons by which to avoid the shoals, and to steer onward in the current of the future, than as provocations to disunion, or precedents for error.

In conclusion, my opinions on many topics I give up to discussion, but I ask and expect a fair and impartial discussion.

Your friend and devoted servant,

L. A. A. DE VERTEUIL.

PORT-OF-SPAIN, *May*, 1856.

PREFACE.

It is to me somewhat surprising that geographical works, in general, should contain so many and such glaring errors, even respecting countries which, certainly, ought to be better known. Not to deviate from the subject in hand, and selecting Trinidad as a case in point, I may remark that such errors are of frequent occurrence in some of the best works that have made mention of the island, and also in books of very recent publication.

Adrien Balbi, speaking of Trinidad, has only these few words, "*Spanish Town* (jadis Puerto España), ville *fortifiée* et commerçante, avec un port et peut-être 10,000 habitants; Saint-Joseph d'Oruña, autrefois capitale: *Charagaramus*, importante par son beau port, et *les chantiers que les Anglais y ont établis.*"

Thus Balbi alters the name of the modern capital from *Port-of-Spain* to *Spanish Town;* he terms it *fortified*, whilst it is an open, unwalled town; also, instead of *Chaguaramas*, he writes *Charagaramus*—a misnomer, adopted by all the French geographers—making it, besides, an important place "*on account of the dry docks therein established by the English.*"

In Mr. Montgomery Martin's work, "The British Colonies," and the volume on the West Indies, published as late as 1854, I find the following erroneous statements:—"The chief ports resorted to, on the Trinidad side (of the Gulf of Paria), are: Chaguaramas Bay, where the extremity of the north-western peninsula, Gaspar Grande, and other islets, form an immense natural dock, sheltered from all weathers and all winds, and

Port-of-Spain, on whose shores stands the capital of the island." Mr. Martin, therefore, classes as one of the chief ports *resorted to*, in the Gulf of Paria, Chaguaramas Bay, whereas vessels never resort thither, except at intervals, to take in ballast. Let me here observe again, that Port-of-Spain is the name of the *town*, and not of a *port*. Mention is likewise made of the "*Mariquire Bay*," near which is the "Naparima hill," and yet, Mariquire Bay is, I believe, totally unknown to the inhabitants of Trinidad. Not more readily could any one of them ever have imagined that, from Mount Tamana "the lovely and fertile valleys of Maraccas and Las Cuevas extend themselves before the eye," for this good reason, that, between Tamana and those valleys, the northern range rises nearly 1,400 feet above the former. Again, never was *Rio Grande* a *good roadstead*—the only safe harbour, on the whole northern coast, being Maraccas Bay, which is not even mentioned in Mr. Martin's work.

According to the census of 1851, the *natives of Europe*, then in the colony, amounted to 1,494, and Mr. Martin sets down that number as representing the whole of the *white* population of the island, which is about 4,500. He correctly states that the sugar crop of 1852 was, at least, 50,000,000 pounds, and, in a few lines after, he writes, "The crop of the year 1852-53 season *was equal to about* 56,000 *hogsheads*;" but, the Trinidad hogshead of sugar being, generally, reckoned at 1,600 pounds net, the 56,000 hogsheads would have given the enormous quantity of 89,600,000 pounds, which would be a gross exaggeration. The exact quantity was 30,555 hogsheads, 3,505 tierces, and 6,601 barrels—equal to 35,220 hogsheads. And yet, the British public is undoubtedly satisfied that Mr. Martin's work is a correct record of facts, and that implicit reliance may be placed on his statements.

In preparing the following pages, my anxious desire has mainly been to make Trinidad better known to the British public in general, and to its own inhabitants in particular. It is really surprising how uninformed even Trinidadians are regarding their own country. Our best schoolboys are able to give the names

of the chief rivers, and the position of the principal towns in Great Britain, France, and even in Russia and China; but they are ignorant, perhaps, of the names of the Guataro and Oropuche, or through what county the Caroni has its course. They know that San Fernando exists, but may not be able to say whether it is on the eastern or the western side of the island; they can give the principal boundaries and dimensions of Europe, and its larger kingdoms, but are ignorant of those of their own island-home; they can enumerate the chief productions of England or France, but they do not know what are the agricultural products of their own country, or whether the quantity of sugar exported is 35,000 or 56,000 hogsheads.

Not only is such ignorance discreditable, but its effects cannot but be prejudicial to the best interests, and consequently to the advancement of the colony.

With this view of being serviceable, particularly to my own countrymen, I have entered into details which might otherwise have been overlooked. Being also under the impression that statistical facts and comparisons make a deeper and more lasting impression on the mind than mere statements, I have taken great pains in preparing a few tables which, I hope, will prove useful in drawing and fixing the attention of those who can judge for themselves, and in circulating correct notions regarding the commercial and agricultural capabilities of Trinidad. Ruin and misery are hovering over the community; and to resist and escape both, we must strain every sinew, since no efficient support can be relied on from the mother country: we must, on the contrary, be prepared to struggle singly with every new difficulty which may be unexpectedly thrown in our way. We must look to ourselves and assist ourselves by putting our own shoulders to the wheel; and in thus speaking, I have especially in view the welfare of the emancipated class, and of that numerous body of inhabitants who have gradually fallen from comparative affluence into the sink of abject poverty. I hope they will find in this sketch sufficient reasons to encourage them to exertion.

It now remains with me to give a few explanations, and to

accomplish a pleasant duty, in tendering my acknowledgments to those who have supplied me with materials for, or have otherwise aided me in, the completion of this work.

During the eight years of the Right Honourable Lord Harris's rule in Trinidad, his Lordship invariably manifested the liveliest interest in the welfare of the island, not only as to the development of its natural resources, but also in regard to the intellectual and moral improvements of its inhabitants; and that interest he evinced in various ways, but particularly by directly encouraging useful information, and the diffusion of knowledge among all classes.

After awarding a very liberal prize to the best Essay on the Cultivation of the Sugar-cane and the Manufacture of Sugar, his lordship proposed for public competition another Essay on the Vegetable and Mineral Resources of Trinidad. Various reasons then prevented me from writing on the subject; the proposals, however, aroused in my mind a strong desire to bring under public notice the natural resources of this important, but comparatively unknown and much neglected, colony; and to that circumstance may be traced the origin of the present work.

My personal knowledge of the island being confined to a few localities only, I have availed myself of information drawn from publications on the subject, and especially from the valuable survey made by Captain Columbine, of the northern and eastern coasts of the island. From the survey of Captain Laurence, of H.M. schooner *Scorpion*, I have also obtained the elevation of some of our mountains and a few remarkable spots. These aids, however, were not alone sufficient to enable me to give the topography of Trinidad; but from many kind friends I have received most useful and interesting contributions, and from some, material aid: to these gentlemen, too numerous to be individually mentioned, I here offer my most grateful acknowledgments: they are, however, especially due to Mr. John Thatcher.

The zoological part of this work is very incomplete; but not only did I not possess the necessary facilities for writing very comprehensively on the subject, but my intention has merely

been to give some short descriptive details of those animals which do not exist in the other Antilles, or which deserve peculiar notice (as I have elsewhere stated) either on account of their prominent utility in the way of food, &c., their singular habits, or their noxious qualities and destructive propensities. I hope, therefore, the reader will make allowance for the little information afforded under this head. The botanical part will be found much more complete.

My friend, Dr. Leotand, has contributed a very interesting memoir on the ornithology of the island. To him also I am indebted for the catalogue of our fishes. The assistance of my friend, Dr. Court, has enabled me to give a pretty complete account of our most remarkable reptiles, and another friend, Mr. H. Crüger, has kindly furnished a very talented and valuable sketch of the flora of Trinidad. My thanks are also due to Rear-Admiral Elliot for the perusal of the Blue-book of the colony for the years 1852 and 1853.

In the application of names, I have adopted those which I consider as sanctioned by the common consent and usage of the inhabitants, or which were originally given to certain localities. Captain Columbine, in his report, had mistaken a few names: for instance, he writes, *Las Couvas* and *Patura* instead of *Las Cuevas** and *Matura*. I have also given preference to *Guataro* instead of *Ortoire*, the former being more in accordance with the names of the other rivers of the colony, which are, in general, of either Indian or Spanish derivation. The northern point of the north-western peninsula of Trinidad has, apparently, no known designation: I suggest for its distinction that of *Point Mono*, from its proximity to the islet of the same name.

As to the introduction, it contains my personal views and opinions on the future prospects of the Columbian archipelago, and the line of policy which might be adopted for effecting an amelioration in the condition, and a security to the welfare of its unfortunate colonies. I anticipate that both those views and

* *Las Cuevas* is a Spanish name, which signifies *The Caves*.

opinions will meet with opposition; but, provided they are not regarded as prejudiced or unreasonable, I shall feel satisfied, at least, in not having been misunderstood; for my utmost endeavours throughout have aimed at being strictly impartial as well as practical.

In the collection and arrangement of the materials of this work, I have encountered more difficulty, labour, and anxiety than I had anticipated. My resources were confined within the narrow limits of local information, and I had, in addition, to contend with an imperfect knowledge of the tongue in which I ventured to write.

Also, being unknown, I have thought it necessary to seek support for my opinions from those whose social position or literary reputation may be regarded as an authority; hence the cause that so many extracts will be found transcribed in these pages.

TRINIDAD.

INTRODUCTION.

Of the numerous groups of islands which stud the surface of the deep, none is of more intrinsic importance than the Western or Caribbean Archipelago; and it may be questioned whether even the Eastern or Indian Archipelago, which alone can stand in comparison, really does equal it in the totality of its local and relative advantages.

In point of fertility of soil, agricultural productions, similarity of climate, and geographical position, they bear a great resemblance to each other, though not without their individual peculiarities. As a consequence, they may be said to have been always antagonistic in interest, and to have progressed in as constant an opposition.

At one period, the Western Archipelago seemed to have gained the ascendancy; but that ascendancy has been gradually transferred to the East, in proportion as European interest, power, and patronage, have been extending in that quarter, and, more particularly, since the abolition of slavery in the West Indies.

The isles of the East certainly do possess many advantages over those of the West; they have greater agricultural and mineral wealth. Gold is found in almost every part, but particularly in Borneo and Sumatra, and no country produces better tin than Banca. Copper and iron are not uncommon, sulphur exists pretty generally, and diamonds are found in Borneo. Copper, only, it seems, is abundant in the Western Archipelago, though traces of gold have been found in Cuba and Hayti; sulphur, however, is not scarce, and salt is plentiful, and of excellent quality.

Sugar, coffee, cotton, indigo, and tobacco, are products of both archipelagos; cotton and indigo of the Eastern particularly; tobacco of the Western. Cinnamon, cloves, nutmegs and black-pepper, are indigenous to the East; vanilla, cacao, cochineal, and pimento, to the West. Rice forms the basis of the agricultural economy of the Eastern; Indian corn of the Western Archipelago.

The isles of the East do not import food, but manufactured goods only; Java even exports rice. The isles of the West, on the contrary, import an immense quantity of alimentary articles. This is, again, an advantage the former enjoy over the latter. The evils arising from such an anomalous position will not be felt so long as the population remains scant or limited, and high money-wages are afforded; but, should it become more dense, and the same plan be persisted in, the most distressing results may be predicted—amongst others, starvation and its concomitant miseries will be the consequence, unless the cultivation of the "ground-provisions" be pursued on a sufficiently extensive scale.

The Eastern Archipelago lies within the tropics, between 19° N. and 11° S. latitude, and between 95° and 135° E. longitude. Its area may be estimated at about 392,000 square miles; that of the Western at about 105,000. The islands of the East, such as Borneo, Java, Sumatra, Celebes, Luzon, are generally of larger dimensions than those of the West.

The total population of the Eastern Archipelago may be computed at 23,000,000 inhabitants, or at the rate of 58·67 to the square mile; that of the Western, at about 3,113,000, or 31·13 to the square mile. Several races inhabit the Eastern Archipelago, viz., the Javano-Malayan and the Hindoo, both of which are again subdivided into many tribes; the Chinese, and also a few Arabians. The prevailing religion is Mahommedan; large numbers of Christians, however, are found in the Spanish, Portuguese, Dutch, and, latterly, the British colonies. The Chinese and Hindoos still adhere to Buddhism and Brahminism. Not exactly slavery, but serfdom exists everywhere, the seigneurial rights of all territory being vested in the sovereigns or hereditary chiefs, and despotism is the only prevailing form of government.

The Western Archipelago is, at present, inhabited by two races, the aborigines or Indian stock being almost entirely extinct. Those two races are the European and the African; widely different in origin, external appearance, and also in habits and prejudices. The representatives of the former are immigrants from Europe; the latter, imported labourers from Africa. The Africans, whilst Europeans continued to be slaveholders, were, for a long time, degraded under the worst form of slavery; but, at the present period, unconditional freedom, and such as was never known to exist in any Asiatic kingdom, practically exists in nearly all the Western isles, and Christianity may be said to form the sole prevailing religion.

In proportion as the natural resources of the Eastern islands become more accessible, a vast aggregrate of industrious immigrants are within hail, and at their beck—nay, at their very doors—ready to avail themselves of any inducement afforded. China is the grand source from which population will flow into Luzon,

Borneo, Celebes, Java, and Sumatra. The Hindoo race will, in preference, seek a home in Ceylon and the peninsula beyond the Ganges.

From what quarter will emigration issue to stock the Caribbean Archipelago? The *United States* are, probably, the source from which the African race will, by degrees, drain off into the Western isles, there to form free communities under the joint protection of Europe and America, or to become naturalised subjects of the various governments to which those possessions at present respectively belong. But this is a question which requires mature consideration, and which I shall afterwards more fully examine.

The present condition of the Eastern Archipelago is cheering and highly encouraging; its *prospects* are those of prosperity and peaceful progress. The present condition of the Western Archipelago is one of hard struggle, and discouraging in the extreme; whilst its prospects are still veiled in obscurity.

The Indian Archipelago is on the highway from Europe to China and Japan, by the Cape of Good Hope, and lies between the southern kingdoms of Asia and Australia. Those kingdoms produce similar articles of food and commerce, viz., rice, sugar, cotton, and indigo; Australia, wheat, wool, and gold. But the latter is also capable of producing cotton, indigo, and sugar. However, New Zealand, Van Diemen's Land, and the southern colonies of New Holland, may be regarded as growing and highly promising markets for the Eastern isles.

The Western Archipelago is on the track from Europe, through Central America, to Japan, China, Australasia, and the western coast of America; stretching between the southern States of the great American Republic and the northern shores of South America; and lying opposite the rich countries of Mexico, Guatimala, Nicaragua, &c. The different regions which are in the vicinity of the Western Archipelago produce, or are capable of producing, the same staples which form the basis of its exports; and, most unfortunately, negro slavery is still in those regions the agent of that production. But, as a compensation for all these disadvantages, there is the geographical position of the Archipelago, its proximity to Europe and the rising countries of North America; also, the greater fertility of its islands, whether arising from the composition of the soil, or from the greatest part of their surface being still covered with virgin forests.

The Caribbean isles are in general fertile, some of them remarkably so, and they can be made to yield all intertropical productions, such as sugar, coffee, cotton, indigo, cacao, spices, rice, and the best tobacco in the world. They can also produce, for the support of their own population, an abundance of alimentary substances, particularly plantains, corn, rice, cassada, and other farinaceous roots, with all sorts of vegetables and fruits;

also, poultry, hogs, and oxen. Some of them abound in beautiful cabinet-woods, and the most durable timber. Their numerous harbours and ports are capable of accommodating vast fleets of merchantmen, and of affording anchorage to the united navies of the entire world. Cuba, alone, possesses, besides many bays and havens, at least a dozen first-class sea-ports; and the Gulf of Paria, between Trinidad and the province of Cumana, in Venezuela, may be regarded as a truly magnificent harbour, closely and securely sheltered from all winds and weathers. In no part of the world is navigation more easy and safe than in the Caribbean Sea: it is, however, visited, at intervals, by hurricanes, which spread ruin and devastation wherever they are felt. The Antilles are also subject to earthquakes, of which sad records are written in the annals of some of the islands. The climate is generally unhealthy on the seaboard, remittent and intermittent fevers being prevalent; dysentery and yellow fever may also be said to be endemic.

The proximity of the Western Isles to Europe, the great capabilities of their soil for producing the tropical staples and other articles of commerce, formerly rendered them of great importance; and, for many years, their possession was warmly disputed by the European powers. For a long period they enjoyed the privilege of supplying Europe with colonial products, and the French colony of St. Domingo then ranked as a queen amongst her sister isles: but after passing through alternations of prosperity and depression, these islands have at length approached a most eventful crisis, and those among them that still retain something of their pristine eminence—it grieves me to say—are those which have not abjured the wholesale abominations of slavery. The time, however, has arrived when they, too, must yield and submit to the *fiat* of public opinion.

These islands were, therefore, at a by-gone epoch, rich, and flourishing; but they were then cursed with the loathsome *lepra* of slavery; they are now free, but many of them fast sinking into the abyss of misery. By contrasting their present, with their former social condition, the philanthropist has reason to rejoice; but, on the other hand, the comparison of their actual state of industrial depression with their past prosperity, cannot but be a subject of anxious reflection to the statesman and philosopher. It behoves these parties, therefore—whether as leaders in the senate, or as deep searchers into the nature of things—to consider it both a profitable and incumbent duty to institute a diligent and persevering inquiry into the various causes which have induced such results, and into the best means for remedying the same, and improving the condition of the emancipated colonies. For, these colonies are, by the progression of modern navigation, brought nearer to Europe than they ever were, whilst contiguous to them,

new markets are rising, viz., the United States, Canada, Nova Scotia, and New Brunswick; they still possess their fertile soils, and their productive capabilities unimpaired. When the great Columbus sailed from Palos in search of the golden regions of *India* and *Cathay*, he met them on his way; and surely their geographical position has not changed in our days. Ere many years have elapsed, the land section of the great commercial highway to Japan, China, and Australasia; to Oregon, California, and the western shores of Mexico and Central America; to Ecuador, Peru, and Chili, will have been completed—thus establishing a communication between the Pacific and that great Mediterranean Sea of the New World which lies almost within the lap of the Antilles.

The numerous islands which form the Western Archipelago, classed as the Great and Lesser Antilles, are scattered in the form of a horse-shoe, along an arched line running eastward and E.S.E., from the entrance of the Gulf of Mexico, and then curving southward to the mouth of the Orinoco, whence they stretch westward along the northern coast of Venezuela, to the eastern extremity of the Gulf of Maracaïbo; they lie between 10° and 27° N. latitude, and 60° and 85° W. longitude—the greatest distance between any adjacent two of them being about 100 miles.

By drawing a line from the Bay of Apalache, through Florida, to Point Galesa in Trinidad, and another from Tampico in the Gulf of Mexico, through Yucatan and the Mosquito country, to the mouth of the Atrato, it is found that these two lines run very nearly parallel, and that together with the southern coast of the United States and the northern coast of South America—which also tends in a nearly parallel direction, they form an oblong, which comprises within its limits the great Mediterranean sea of the West. This sea is completely land-locked on the N.W. and S., whilst being bounded on the E. by the chain of the Antilles; a great many outlets are left between these islands, extending as they do over a space of 17° of latitude, or 1,200 miles.

This vast inlet of the Atlantic consists of two distinct basins, viz., the Gulf of Mexico and the Caribbean Sea. The former is nearly of a circular form, being shaped on the N.E. by the western coast of Florida; on the N. by the coasts of Alabama, Mississipi, Louisiana, and Texas, in the United States; on the W. by those of Mexico, from the mouth of the Rio Grande to Vera-Cruz, whence it is rounded on the S. and S.E. to Cape Catoche in Yucatan, which stretches northwards towards Cape Sable in the extreme S. of Florida. Into the entrance thus narrowed by the approach of these points, Cuba advances so as to hold the key of that most important basin—the Gulf of Mexico, important, as being the outlet of the great valley of the West, and of the

commercial road from the Pacific through the Isthmus of Tehuantepec.

The Caribbean Sea is more irregular in its formation, and is bounded, on the W., by Central America and the Isthmus of Panama; on the S., by New Grenada and Venezuela; on the N., by Cuba, Hayti, and Porto-Rico; on the E., by the Lesser Antilles, from the Virginia islands down to Trinidad, which holds the key of the rich and extensive basin of the Orinoco, as does Cuba that of the Gulf of Mexico. This basin is the outlet of the following important rivers:—the San Juan, the Atrato, the Magdalena, and the Orinoco; likewise, of the commercial roads from the Pacific through the territory of Nicaragua, and the Isthmus of Panama. Lake Maracaibo is also an inlet of its waters.

Lieutenant Maury, speaking of the Gulf of Mexico and the Caribbean Sea, says in rather enthusiastic language, but which is well adapted to my object:—"Nature has scooped out the land in Central America, and cut the Continent nearly in two there, that she might plant between the mouth of the 'King of Rivers' and the 'Father of Waters' an arm of the sea, capable of receiving the surplus produce which the two grandest river-basins on the face of earth, are, some day, to pour out into the *Gulf of Mexico* and the *Caribbean Sea.* These two sheets of water form the great commercial lap of the south. This sea and gulf receive the drainage of all the rivers of note in both Continents, except *La Plata* on the south, and *Columbia* on the west; the St. Laurence, and those of the Atlantic seaboard, on the east.

"The Caribbean Sea and the Gulf of Mexico are twin basins. They are seas Mesopotamian, and wholly American. The great equatorial current having its *genesis* in the Indian Ocean, and doubling the Cape of Good Hope, sweeps by the mouth of the Amazon: and, after traversing both the Caribbean Sea and the Gulf of Mexico, meets with the gulf-stream and places the commercial outlet of that river almost as much in the Florida Pass, as is the mouth of the Mississipi itself."

"These twin basins are destined, by nature, to be the greatest commercial receptacles in the world. No age, clime, nor quarter of the globe, affords any parallel, or any conditions of the least resemblance, to those which we find in this sea or gulf."

"What other arm of the ocean is between two Continents with opposite seasons? Where is there another gulf-stream, uniting the waters of an Amazon with the waters of a Mississipi, an extra-tropical with an inter-tropical river? Where, in the wide ocean, or the wider world, is there another Mesopotamian sea, that is the natural outlet for a system of river-basins draining an extent of arable and fertile lands greater than the Continent of Europe can contain, that yield all the productions of the torrid and the temperate zones?"

"From the Gulf of Mexico, all the great commercial markets of the world are down hill. A vessel bound from the gulf to Europe, places herself in the current of the great stream, and drifts along with it at the rate, for part of the way, of 80 or 100 miles a day."

"And when there shall be established a commercial thoroughfare across the isthmus, the trade-winds of the Pacific will place China, India, New Holland, and all the islands of that ocean down hill also, from this sea of ours. In that case, all Europe must pass by our very doors on the great highway to the markets both of the East and West Indies."

"This beautiful Mesopotamian sea is in a position to occupy the summit level of navigation, and to become the great commercial receptacle of the world. Our rivers run into it, and float down with their currents the surplus articles of merchandise that are produced upon their banks. Arrived with them upon the bosom of this grand marine basin, there are the currents of the sea and the winds of heaven, so arranged by nature, that they drift it and waft it down hill, and down stream, to the great market-places of the world."

This is a spirited, and, to the reflective statesman, a true picture of this Mesopotamian sea, as the talented writer calls it. But the Antilles form its Eastern limits, and, therefore, must evidently participate in its importance.

How is it, then, that the British nation, holding possessions in this Archipelago, take so little interest in their welfare as nearly to have given them up to ruin, misery, and eventual barbarism? How is it that these colonies, once so eagerly coveted, are in our days virtually neglected and disregarded? In explanation of these melancholy facts several reasons may be adduced.

The growing importance of the Eastern trade, and the discovery of gold in Australia, have monopolised public attention; and the almost unparalleled success of the free-trade policy, which tends to render the whole world an open field for British enterprise, has greatly diminished the importance of colonies in general, and of the West Indies in particular.

So great is the present prosperity of the British nation, and so solidly based does it appear, that, in their estimation, no events are likely to disturb that prosperity; it is not even suspected that these possessions, to become once more important, only claim and require some fostering care, but that both their claims and appeals are entirely disregarded. The once *crack*, but now disabled, ship is abandoned; but look beyond, and there behold a rival cruising around ready to pick up any part of the wreck, and offering every assistance to the crew.

The present state of depression of the emancipated colonies is evidently one cause of their being neglected. Capital

does not venture where there is no security and little profit; but that state of depression has been brought on by a variety of causes, and is principally connected with the institution of slavery, which prevailed for several ages throughout the Archipelago. Negro slavery may be said to be the root of our difficulties—the effects of which must be felt for some time to come.

For a period of years European interest and public opinion were in favour, not only of the establishment, but also of the extension and maintenance, of slavery and the slave trade; and so callous had public feeling become in regard to the unfortunate bondsmen that those humane provisions, which formed part of the primitive law of slavery, were allowed to fall into desuetude, and an unlimited and ruthless authority was practically yielded to the grasp of the slaveholder.

The time, however, was coming when new sources of colonial wealth were to be opened up, and the evils of slavery made glaringly evident. A strong and proportionate reaction took place, and public opinion, which had slumbered for years, was aroused in all its might in favour of the oppressed African race, and against its oppressors. All parties concerned in, as well as everything connected with, negro slavery were indiscriminately anathematised, and an unmitigated condemnation was broadly passed on the slaveholder and the white class inhabiting the colonies. The planter was loaded with the crime of all Israel, and sent forth as the scapegoat into the wilderness of political and social abandonment. Nay, so violent was the enmity of his arraigners, that every species of injustice was practised towards him in retaliation for the crying injustice of slavery; and, unfortunately for these colonies—for the emancipated as well as for the planters—any act which would have benefited the class of proprietors was regarded as an injury aimed at the class of labourers. As a consequence, all other considerations, save that of protecting the emancipated slave, were overlooked; and—quite inconsistently with the admission that years of oppression had degraded the slave and rendered him unfit for the duties of a freeman—the emancipated, who required years of gradual preparation for a new and responsible position in society, were at once granted greater liberty than is possessed by the great majority of the people in Europe, whilst distrust in the whole proprietary class was sedulously nourished; and, let me remark here, that the greatest praise is due to the emancipated for having resisted the almost incessant excitement under which they were placed. It was not apparently recognised that, by acquiring all the rights of freemen, the emancipated had come, *de facto*, under the obligation of fulfilling all the duties of freemen; and that the granting of the former, without exacting the latter, was essentially the destroying of social equilibrium, by doing away with all counter-

poising action. This highly injudicious policy was evidently the most fruitful source of miseries to the people of these islands. I do not here pretend to say that legislative authority ought to have been placed or left in the hands of the proprietary body; this would have been highly imprudent. But the same power which had decreed emancipation ought to have prepared a code of regulations for the good government of the emancipated. The greatest attention was bestowed on the growth of the young tree; all obstacles were carefully cleared away, and the friends of progress were elated at the wild luxuriance of its foliage; but they did not seem to have reflected that the most vigorous plant bears comparatively unsavoury fruit, and that, in order to render a tree ornamental, and at the same time useful, it is necessary that it should be judiciously pruned by a skilful, but unsparing hand. It does not, however, form part of my plan to enter into detail on this subject, or into considerations which are too late to be of any utility.

I am aware of its being maintained by many that the Act of Emancipation has had nothing to do with the present position of affairs in the West Indies. It cannot be denied, however, that the abolition of slavery was one of the most extraordinary social changes recorded in the history of the human race. It will also be conceded that the most natural and immediate result must have been a greater or less revolution in the relations of the different classes which then constituted Colonial society; and I take it for granted that such disorganisation must have influenced, temporarily, at least, the welfare of the community. Again, it is evident that the change thus effected must have been greater or less in degree, and more or less permanent, according to the nature of the elements brought into operation; and that, in case these elements should be very dissimilar or antagonistic, the reaction might be such as to produce a complete dissolution of the whole mass, unless such dissolution were prevented or modified by concomitant conditions.

The revolution produced was instantaneously felt in the labour-market, the available amount being either directed into a new channel, rendered unsteady, or permanently reduced. The amount of labour diverted into new channels was not exactly lost; but was in many cases such an exchange as tended to the great detriment of all classes—as is shown by the immense increase in the number of carpenters, masons, and other tradesmen, tailors, petty shopkeepers, &c. The permanent reduction for agricultural purposes was, on the contrary, a real loss to the colonies; since the cultivation of staples is the only foundation of their commerce and of their prosperity.

One of the greatest difficulties, however, with which the colonists had to contend, was the unsettled and precarious state of the

labour market. For whenever, as in the case of a sugar estate, continuous labour is required and cannot be obtained, the whole system of agricultural economy thereby suffers; in fact, whenever the available labour is not proportionate to the demand, agricultural interests are imperilled; and such was the position of nearly all the emancipated colonies—whether Danish, French, or British—excepting Barbadoes and Antigua, where nearly the whole of the land was under cultivation. In Jamaica, Dominica, St. Lucia, St. Vincent, Grenada, and Tobago, the cultivation of the sugar cane has been greatly reduced. Demerara and Trinidad, however, may be pointed out as exceptions, since their exports have lately increased to the former averages; and yet their experience is highly confirmatory of what I have alleged. The importation of Asiatics and other labourers has alone prevented a proportionate decrease or total abandonment of sugar manufacture in these two colonies; and that in so far only as those labourers were brought under indentures, and their labour rendered regularly available.

It is admitted, as an axiom, that free is cheaper than slave labour, because, it is said, the freeman finds, in a strong desire to improve his condition, a stimulus to exertion which the slave has not. As a general principle, the admission is correct; but this, as well as all other rules, has its exceptions. Undoubtedly, the freeman ought to be more active and more industrious than the slave. But indolence and prejudice may prove the deadliest paralysers of energy in improving any condition. Well, then, without adverting to the fact that in *Trinidad, at least*, the labouring population have never since emancipation reared or produced the same amount of animal or vegetable food which they did during the period of slavery; the history of the emancipated class since 1838 affords a striking proof that strong counter-impulses have been in operation to check the impetus of freedom.

To assert that hired is cheaper than slave labour, becomes a paradox, if taken in an absolute sense; and the best proof of this is the extension of agriculture and the increase of trade in Cuba and Brazil, as compared with similar interests in the emancipated British colonies. Whenever free labour is abundant, it is certainly cheaper—as in Hindostan—but, wherever the population is scanty, and labour not easily procurable, slave labour then becomes decidedly the cheaper and more gainful, for this simple reason, it can be concentrated within given limits, and arbitrarily directed, in all cases of emergency, and at the most suitable junctures, to the production of the contemplated results.

I only contend here that, as certain effects flow from certain causes, so certain results ought naturally to have succeeded the abolition of slavery; and that these results had necessarily a great influence on the conditions under which the social economy of the

colonies was constituted. In my opinion, however, measures might have been devised to counteract some of these results, and to render the act of emancipation what it ought really to have been—a boon to the slaveholder, as well as to the slaves themselves, a powerful engine of civilisation, and an advantage, not only to the colonies, but to the parent nation at large.

Had wise and well-calculated measures been adopted to prepare or to conduct that vast experiment of emancipation, there would now be no occasion for refuting the allegation that "emancipation was a Quixotic act, alike injurious to both master and servant, commercially detrimental to the nation, and therefore to be considered as a warning, rather than held forth as a lesson for the guidance of other slave-holding states." But, not only was public opinion impatient of all delay, and indignant at all restrictive regulations, but a cry, loud and incessant, was raised against the old and cherished system of protective duties; and the adoption of an entirely new policy was urged by the Manchester school of economists: a policy justified by its success, but which is, it must be conceded, supremely inconsistent with the high and holy principles which dictated the abolition of negro slavery.

A few years only after societies had been formed in Great Britain against the consumption of articles, the produce of the British slave colonies, some of the very men who had lauded the formation of such societies, or approved their object, began to show the inconsistency of interdicting slave-grown sugar, coffee, and cocoa, whilst admitting slave-grown cotton; and the principle which had first prevailed, that a differential duty should exist between free and slave-grown produce being abandoned, the Act of 1846 was passed.

Free-trade policy, and above all, the Equalisation Act of 1846, has had a greater share in depressing the already suffering colonies of the west, than is generally believed. That Act was passed eight years after the abolition of slavery, so that only eight years had been granted both to the planters and the emancipated class for recovering from the shock of a great social revolution, and for settling down from the violent oscillation which had been imparted to the entire social body in the colonies; these eight years had also been a period of unceasing contention, and of growing bewilderment. The planter had to be taught by experience, and by experience only, a totally new system of property-management; the emancipated had to be taught that freedom imposed on them new duties and new obligations; that it behoved them to become industrious, to obey laws and submit to prescriptions of which as slaves, they had had no idea. And, notwithstanding what may have been said to the contrary, both planters and emancipated have proved themselves equal to all reasonable expectations. For who, with the slightest knowledge of human nature, could possibly

have expected that the one party would neither commit disorders in practice, nor the other be guilty of errors in judgment?

During the time of slavery, free labour, when procurable, was paid at a very high rate; immediately after emancipation, the labouring population considered themselves as entitled to, and actually received, the same high wages; and through fear that the labourers would altogether retire from the cane-fields, the planter willingly paid the amount demanded, in order to keep his property under cultivation till better days should arrive. The scarcity of labour in the colonies, and the high price of sugar in the home market, seemed to concur in justifying, both the unreasonable demands of the labourer and the imprudent offers of the planter. Things were carried further still; the planter, instead of showing himself provident and calculating, began to create a competition in the labour market, by offering enhanced wages to the labourer. Led on by reckless improvidence, and deceived by fallacious appearances, he at once sought to extend his cultivation, at a moment when the labour market was already under a severe strain, and offered the most exorbitant wages for daily task work. The labourer, seeing his employer yielding at discretion, wantonly indulged in idleness and revelry, or squandered his time in wandering over the country, from place to place, being always certain of procuring shelter and work wherever he preferred remaining, even for a few days.

Meanwhile an outcry was raised in Europe against the colonists; the high price of sugar, and the exorbitant wages paid to the field labourers, furnished the free-traders with an inexhaustible theme for declamation. The distrust imbibed and fostered against the planters, rendered all suggestions coming from, and all measures prepared by them, either suspicious or unacceptable to the Anti-slavery Society; so that, at the very moment the former required encouragement and support, they beheld clouds gathering in the eastern horizon, and could perceive the elemental array of impending storms. The *bonâ-fide* abolitionists *did* clearly foresee the evils which the new policy foreboded to the emancipated colonies, and yet, they were altogether as tardy and vacillating in their opposition, as if they were not aware that the interests of the planters and those of the emancipated had become so intimately blended, that one could not prosper without the aid of the other.

The Act of Emancipation is of comparatively so recent a date, and the great mass of the coloured class has hitherto had so little opportunity of acquiring either wealth or instruction, that, in these colonies, wealth and instruction may still be said to form, as it were, a privilege of the Europeans or whites. If these be compelled to retire from the field, capital and industry must retire with them; misery must follow, and barbarism take the

place of civilisation. Let the emancipated class, let the African race be fully initiated in the arts and duties of civilisation, and then they will require neither the capital nor the information and skill of the European; but till this be done, it must be stamped as the height of imprudence, or at least as very bad policy, to encourage an antagonism of interests between the two races.

The free-trade school, however, had gained its point, the Corn-laws were abolished, and the Act of 1846 soon followed, establishing a progressive equalisation of duty on sugars of all growth. Now, in order impartially to judge of, and fairly to appreciate the influence which that Act has exercised on the prosperity of the West Indies, it becomes necessary to examine the influence which the free-trade policy has had on the value of our marketable staples and on our commercial position.

I have already proved that slave countries can produce sugar and other articles at a cheaper rate than can be effected in the emancipated colonies. I have now to show that whilst Cuba, Brazil, Porto Rico, the Mauritius, the United States, the East Indies, &c., have enormously increased their production, the emancipated colonies have not yet reached the average furnished previous to the abolition of slavery.

The following table of exports, from the emancipated colonies, is extracted from Mr. M. Martin's work:—

Years.	Sugar export. Cwt.	Molasses export. Gals.	Rum export. Gals.
1833	3,646,295	687,784	5,109,975
1852	3,408,627	473,091	5 061, 02

In 1833, the island of Cuba exported 290,600,000 lbs. of sugar; it now exports 400,000,000 lbs. In the year 1833, Louisiana produced 75,000,000 lbs., and the crop of 1850 was of 269,770,000 lbs. In 1851, Brazil exported 168,000,000 lbs. In 1834, the quantity shipped from the East Indies was 11,423,664 lbs.; and 25,759,904 lbs. in 1839. In 1830, the Mauritius exported 67,926,692 lbs; and the shipments of 1853 reached nearly 203,000,000 lbs. Java has augmented its production in a still greater ratio; it was about the year 1831 that sugar was exported for the first time from that important Dutch possession, and the quantity shipped in 1853 amounted to 70,000 tons, or 156,800,000 lbs. It will be said that slavery does not exist in the East Indies, the Mauritius, or Java; but in those countries free labour is as cheap as in any part of the world, and, since emancipation, the labouring population of Mauritius has been increased by 100,000 Indian coolies: in Java a field-labourer's wages are rated at 4 cents. (2d. sterling) per diem.

Here is, therefore, the fact, that whilst all other sugar countries have greatly augmented their amount of produce since the year 1833, the British West India Islands have not been able, even at the greatest sacrifices, to recover their lost ground. To this result the free-trade policy has greatly contributed. Not that I mean to say that free trade has acted as a direct check to the production of sugar and coffee in the British possessions, but it has evidently given a powerful impetus to the production of the same articles in other countries, thereby creating a ruinous competition, and that, particularly, in slave countries where the holders of property at once began to make preparations for profiting by the advantages thus tendered.

Free-traders argue that, as a compensation, the emancipated colonies have been admitted to all the benefits of free trade, and that, if they lost on the one hand, they have gained on the other. This I admit, only with restrictions; for sugar is not treated in the home market according to the principles of free trade, since the colonists pay an *ad valorem* duty of 90 to 100 per cent. They are not, besides, in a position to profit by the advantages offered, since they are compelled to ship their produce to parties at home in return for advances of money or merchandises at a usurious rate of, at least, 25 per cent. Both from want of capital, and from the precarious state of the colonial market, they cannot improve their article, and, as a consequence, they must send their sugar to those places where it can undergo the process of refining, since it is too inferior for grocery purposes; so that the commodity is, perforce, sent to the cheapest market, and under the most unfavourable circumstances. These difficulties are also increased by the influence of prohibitive duties in the foreign markets. Free-traders may truly contend that their policy has had nothing to do with this state of affairs; but it cannot be denied that its tendencies have greatly complicated the situation of the before-embarrassed West India Colonies.

Nearly all our misfortunes, I readily admit, are the results of our position; but from what cause or causes did that position arise? And have the colonists had anything to do in the matter? They are evidently the sufferers, and have not within their own power the means of redressing their grievances. Does any remedy exist? or does Great Britain need to be inconsistent in order to afford them relief? These are questions to which, I am perfectly aware, some have ready answers; but these are also complex questions which require the closest consideration.

Emancipation was not only a political, it was, above all, a philanthropical act—an act of reparation, intended as the means of the regeneration of the oppressed race. As such, it ought to have had its results; and one of those results was surely to extend its benefits, as far as possible, to the whole African race, by

discouraging negro slavery in all countries where it actually existed. The reverse, however, may be said to have practically ensued; for, at the very time in which the British navy was employed in checking the slave trade on the coast of Africa, the British Parliament was passing measures which indirectly, but most effectively, favoured that trade, by tendering a premium to slave produce. Certainly, it is difficult to say what would have occurred had the British market been closed against slave-grown sugar; but I am justified in concluding, from what *has* taken place, that such a measure would have been the death-blow to the slave trade, both in Cuba and Brazil.

The only reasonable objection which could have been urged against the adoption of such a line of policy is, that the supply of sugar would have diminished in the home market, the price of the article been enhanced, and the consumption checked. The remedy, however, was obvious; by lowering the duties on sugar to five or six shillings, prices would have decreased in proportion, and consumption would have increased in an equal ratio. It is answered, this could not be done, because it would have caused too great a diminution in the revenue.

The West Indians reply, that the deficit might be easily balanced by levying a light duty on cotton. "On cotton!" exclaim the Manchester men, "such a proposition is most illiberal, unwise, and preposterous, for British goods must have the advantage in the markets of the world; to gain this, it is necessary that our goods should be offered at lower prices than those of other nations, and this can be obtained only by admitting the raw material duty free." Not only, therefore, did great Britain exact, for the sake of her revenue, a duty of nearly one hundred per cent. on raw sugar, but that duty has been lately raised in order to aid in the expenses of the late war. Can the West Indians, under such circumstances, avoid the conclusion that, though the islands form an integral part of the British dominions, their interests do not obtain an equal amount of solicitude or regard?

But to what end should the colonists complain, and on what grounds? As colonists, they are dependent, and injustice can and will be practised against them as long as such a line of procedure may suit the interests of the British nation. Besides the above-mentioned causes, however, others have been active in producing the present depression. Legislation, or rather non-legislation, to use a more suitable expression, has brought forth bitter fruits from the act of emancipation.

New laws were obviously necessary for a society the foundations of which had been wholly upturned, and these laws ought to have been based on the consideration of the occupations, customs, and prejudices of the population for which they were intended; on the social institutions which had formerly existed, and the con-

sequent moral condition of the people—to which may be added a due regard to the influence of climate. But it seems that only one object was to be achieved—the emancipation of the slaves; the rest, it was taken for granted, would follow as a natural consequence. The result has proved the fallacy of the deduction. This, however, is a question which I shall examine in its proper order.

The above may be regarded as a general interpretation of the many and serious difficulties the colonists have had to encounter. But, in order to answer some of the accusations which have been circulated against the West Indians by nearly all those who have adverted to the subject, I must go into further details; and as those censures are reiterated in a condensed form, in the conclusion of Mr. Montgomery Martin's volume on the West Indies, I shall examine his assertions in the following paragraphs:—

Mr. Martin says,—"The treatment, which the apprentices had received, caused a still greater alienation between the labourer and his master than had previously existed, and deepened the aversion to sugar cultivation, which, having long proved a grievous and unrequited toil, performed under the stimulus of the lash by the black man only, was naturally regarded as ignominious, and the new made free man earnestly desired to be himself a proprietor of the soil."

The evil consequences of the system of apprenticeship are not attributable, as here stated, to the "treatment which the apprentices had received," but they were the results of the system itself, precisely as the effect is the result of the cause which produces it. The slaves were told they were free, but also that they must continue to serve as apprentices for terms of four and six years. This they could never understand, especially as such apprenticeship was nothing else than slavery in disguise. What was the consequence? The proprietor was regarded as the only obstacle to the freedom granted by the Queen, and became subject to all kinds of annoyances on the part of his so-called apprentices; and if, in exceptional cases, the labourer was unjustly treated, in nearly all, the planter was ill-used: and yet, the former is, as the pet child, invariably excused, whilst the latter is as indiscriminately censured. Neither were malignants wanting, at the time, who sought to impress on the minds of the apprentices the idea that the planters were really the only obstacle to immediate freedom; this did indeed increase the alienation which already existed between the labourer and his master, but not, as is asserted, the treatment the former received, and which had been regulated by law. True, the planter did not engage instructors for his labourers, neither did he give them an opportunity of being instructed: but who, in his position, would have done so?

"When these facts are taken into consideration," again says

Mr. Martin, "when it is remembered that tracts of greater or lesser extent of waste but rich land existed in the colonies, excepting *Barbadoes* and *Antigua;* that the *ci-devant* slave proprietors were, in most instances, impoverished, in many, ruined and dependent on merchants and others, who made annual advances at exorbitant rates of interest, to enable them to cultivate the estates; in consideration of receiving all the consignments of produce, for which accounts were rendered at their own discretion: that communities thus situated and embarrassed were devoid of the ready money whereby wages could be daily or weekly paid to several hundred thousand labourers; and that, in all the colonies, for at least nine or ten months of the year, food and other requisites were obtained from *America* and England; it is surprising that sugar cultivation was continued at all after emancipation; and still more remarkable that, in the efforts to provide for their daily bread, the negro population should have raised themselves from their former degraded position."

Here is an admission that "merchants and others" *were* greatly instrumental in the ruin of the colonists, by "making advances at exorbitant rates, and receiving consignments of produce for which accounts were rendered at their own discretion." Indeed, it is but too true that the planters who needed advances, had to accept them at the rate of from 30 to 40 per cent.; nay, many of those who practised usury to that extent, were the very parties to calumniate their victims. Here again, a sort of parallel is drawn between the *ci-devant* slave proprietor and the negro population, in which implicit blame is attached to the former, and praise awarded to the latter. By far the greater part of the compensation grant (£1,039,119) had been applied to liquidating the mortgage and other debts of the planters, so that the majority of them began the new era free from liabilities, many with reserve funds. But they were soon afterwards involved in new difficulties, from the exorbitant wages they were compelled to pay in order to obtain even a bare modicum of labour, and from usurious rates of interest paid on capital advanced by merchants, and others, residing in England. "I could quote to Your Lordship," wrote Lord Harris to Earl Grey, in April 1848, "I could quote estates, as far as their soil is concerned, of great value, and giving, previously to emancipation, a large income, on which the whole of the redemption money was expended in improvements; which were entirely free from debt at the time, and which are now mortgaged almost to their full value; and their proprietors, resident Creoles too, from being in good circumstances, reduced to the last extremities. In those cases, the want of labour at a fair rate has been the chief cause of their embarrassments; they surely have some claims for assistance from the mother country."

What assistance we have received, all know. It is, *indeed*, surprising that "sugar cultivation was continued at all after emancipation," and this fact speaks volumes in favour of the much-abused and ill-treated "*ci-devant slave proprietors.*" The passage before quoted contains, however, an accusation—and a well-deserved one—against the emancipated class, as proved by the following observation: "For at least nine or ten months of the year, food and other requisites were obtained from America and England." As to *requisites*, other than food, it is evident that they will, probably for ever, continue to be obtained from England and other manufacturing countries; since the isles of the West, as all other intertropical regions, seem ordained by nature as the storehouses of the raw materials, whilst temperate and cold countries are the laboratories wherein art utilises the same by manufacture. But the emancipated colonies ought to produce the greater, if not the entire, quantity of the food they consume; and it is again evident, that the agents of that production naturally are the *cotters*, or small proprietors, and especially those who can themselves "till their land, surrounded and assisted by their families." And yet it may be safely asserted, that in nearly all the colonies the production of alimentary articles has greatly diminished since emancipation; and, what may seem paradoxical, it has apparently decreased in proportion as there were greater facilities for their production. How to account for this rather extraordinary fact it is difficult to conceive, except by the admission that where the emancipated class were necessitated to employ themselves as labourers, as in Barbadoes, Antigua, St. Christopher, &c., they have preserved or acquired habits of industry, which they do not possess where they are at liberty to live in indolence and ignorance; avoiding labour as much as possible, and vegetating on the strips of land which surround their cottages. However, whatever be the cause, this is an undeniable fact, which, together with the admission of Mr. Martin himself, affords very strong and conclusive evidence in favour of the repeated prayers and efforts of the planters for the organisation of some system by which to regulate the labour movements of the emancipated colonies. Every one plainly foresaw that the immediate result of emancipation would be a complete disturbance of the labour market, and, consequently, a paralysis—at least momentary—of the productive powers of these islands. That a fair remuneration would operate as an inducement to exertion, was true; but superficial was the mind that would have trusted to that agency *alone* for continuing the active industry of the emancipated. The much misunderstood—because distrusted—planter coveted not, sought not, the renewal of any law unjust or unfair to the labourer: he called for the interposition of legislative authority to complete the work of emancipation; to exercise a parental interest in the welfare of those who had been

snatched from the fetters of slavery to be delivered to the even more grievous thraldom of their own ignorant and improvident habits. Certainly, the planters contemplated a benefit to themselves. And what was that benefit? That the emancipated should continue to labour according to God's divine commands—to labour for their own advantage, by maintaining the agricultural prosperity of the country of which they were resident inhabitants; to labour, consequently, for the general prosperity of the country with whose progress or decline their own well-being or misery is inseparably interwoven. In relation to this subject, I may quote, perhaps, the following remarkable confession contained in the "London Economist" of Feb. 3, 1855. In a review of the trade of France in 1854 it is stated, "In colonial sugar imported there has been an increase of 17,000 tons as against last year; and the production of the colonies now equals the quantity produced before the emancipation: the fortunate result of the establishment of order, improvements in the manufacture, and the general introduction into the colonies of Coolies." It is, therefore, a fact that less than six years after emancipation was suddenly forced on the French colonies, the quantity of sugar exported equalled the quantity exported during the period of slavery. It is also a fact, that more than sixteen years after emancipation has been peaceably established in the British colonies, the average quantity of sugar exported is still beneath the quantity produced under the system of coerced labour. No one is ignorant of the revolutionary effervescence which for more than twelve months agitated Guadaloupe and Martinique, whilst in the British islands it was a mere ebullition of excited feelings. To account for results so different, in countries otherwise placed by nature in an almost identical position, we must look to some extraneous influence. I have endeavoured to discover and point out the causes which have had such a marked influence on the *unfortunate* results of emancipation in the British West India colonies; on the other hand, the "Economist" traces the *fortunate* results of the same act in the French colonies to the "establishment of order, improvements in manufacture, and the general introduction of Coolies." I dare say we have, since emancipation, introduced more improvements in manufacture than the French colonists have done; the number of Coolies introduced into Martinique is not proportionately equal to that imported into Demerara and Trinidad. The "fortunate result," therefore, must be owing to the "*establishment of order*"—of order in the measures adopted by the mother country—of order in every branch of the administration—in the government of the smallest *commune*—in the regulation of the relations of all classes. I must add, that under the influence of such measures, all seem to be contented and industrious; well-regulated and well-conducted schools are everywhere established, and religious instruction is

sedulously propagated. Can the same thing be said of the British colonies, and is their population prosperous? Yes, says Mr. Martin, but this is an assertion I am bound to contradict. "The prosperous condition of the mass of the people, is shown in their increased ability to bear taxation and to purchase foreign commodities; the public revenue has risen from £432,999 sterling, to £715,759 sterling, and the imports from £3,205,528 sterling, to £4,624,547 sterling, although the value of the commodities usually imported, has been of late years diminished." It would be a hard task for any one to persuade the mass of the people in these colonies that their condition is prosperous. Not only would tradesmen, such as carpenters, masons, and others, show their wages to be less, but complaints would be heard of being scarcely able to find employment; the field labourer will add he is obliged to work longer, and in a more continuous manner, in order to obtain a bare livelihood; and the cotter will support the statement. Now, if we take into account the increase of population, say 242,661, it will be found that the augmentation of imports is only £477,429 sterling, instead of the £1,419,019 sterling that would appear by Mr. Martin's account; so that each freeman, at present, consumes only £2. 5s. more than the slave did. It is also certain that part of the sum is made up from the importation of food. But this vaunted increase of imports is, in my opinion, a very meagre proof of the "prosperous condition of the mass of the people," because, had not such an increase taken place, the conclusion should be—that, as regards personal comfort, the freeman was in a worse condition than the slave. It is also rather complacently remarked, that the "value of the commodities usually imported has been of late years diminished;" but their quality and durability may be said to have also diminished in proportion.

"The next point deserving of inquiry is the allegation that the blacks are fast relapsing into a state of barbarism; and that Obeahism, witchcraft, and other devices of Satan, have been resumed. An answer to this is given in the details furnished of each island, showing an increase of churches, chapels, and schools, and a decrease of crime."

"The moral tone of society is necessarily improved; the coloured girls who, during slavery, were educated to concubinage, now commonly intermarry in their own class, and not unfrequently form unions with men of European blood."

"The moral tone of society," I readily admit, has improved; respect is now paid to what at one time received none. Individuals dare not now publicly avow that which morality condemns; and concubinage, that foul leprosy which clung to slavery, is certainly not carried to the same extent.

This, however, is improvement only in relation to the period of slavery; but when our population is compared with European

peasantry in general, an immense difference becomes apparent; and it is to be apprehended that whatever good has been effected will soon vanish, should the present miserable and precarious state of these islands continue for any length of time. Poverty is the parent of ignorance, as also of consequent immorality and crime; and, I grieve to say, that the evil of concubinage has already found a substitute in a greater—that of prostitution.

As to the allegation that "the blacks are fast relapsing into a state of barbarism," I can only say, there ARE symptoms of such a result; but, before mentioning them, I wish to examine the evidence which Mr. Martin has brought forward in favour of his assertion of "an increase of chapels, churches, and schools, and a decrease of crime." I am not in possession of documents to contradict Mr. Martin's statement regarding the decrease of crime in the other islands, but I can safely affirm that such is far from being the result in Trinidad; for there, as a criterion, the number of even juvenile offenders has fearfully increased. There are also certain crimes which may be said to be now more prevalent, and the repetition of which speaks little in favour of the pretended improvement—I mean incendiarism, petty thefts, and particularly the horrible practice of procuring miscarriage, either to conceal a lapse from virtue, or to get rid of a helpless being which might become a future burden. Obeahism and witchcraft are still practised by many unprincipled individuals of both sexes, who know they will acquire influence, and derive undue advantage, by inspiring the poor, the ignorant, and the credulous, with a dread of their impostures; others assume the garb of religion as a cloak to their base and fraudulent practices; and there are not wanting those who actually profess to believe in Obeahism, witchcraft, and other devices of Satan. These are facts too patent to be denied.

"The increase of chapels, churches, and schools," proves very little indeed. During the period of slavery, churches and chapels existed only where villages or towns had been formed, and, if the slaves were near enough, they were not merely permitted, but even pressed, to attend service; of course those at a distance could not readily avail themselves of the opportunity. After emancipation, numbers of the freed class united and settled in the rural districts, creating villages or townships, at nearer and more convenient distances. In those neighbourhoods churches have gradually been established by Government, as also chapels by dissenters, who particularly availed themselves of the opportunity of erecting places of worship, and forming congregations consisting chiefly of the lower classes.

With regard to private schools, but few existed in the slave colonies, because the number of those who could attend were too small to encourage their establishment, and parents, likewise, preferred sending their children to Europe, as well for the benefit of

change of climate, as for the advantage of a more extended and solid education. Public schools were established after emancipation, and a few private institutions were formed to receive the children of those parents whose reduced circumstances no longer permitted their availing themselves of European instruction, and of those who could afford to pay a small sum in giving a primary education to theirs. The creation of churches and chapels, and the formation of schools, was a necessary consequence of the abolition of slavery; but have the emancipated profited by the provisions so liberally made? This is the question. And as regards education, it can be safely affirmed that the means of acquiring a sound primary education *were* placed within reach of the entire mass of the population; indeed, it may be said to have been brought to each family's door. But almost everywhere they have shown themselves very slow in profiting by the boon so afforded; and, unfortunately, the present state of misery has, for the last five years, operated as a check to the diffusion of knowledge. In fact, immediately after, and for several years subsequent to, their obtainment of liberty, the emancipated exhibited a great eagerness to acquire those ideas which they instinctively felt to be the prime agent of success, and the foundation of respectability; but when it was found that, without industry and honesty, those ideas were superfluous, their acquisition was neglected to a deplorable extent.

I do not here pretend to say there has been no progress whatever, nor that it can be expected the present generation should be exempt from the vices contracted during slavery. I only mean to express my conviction that more progress *ought* to have been made, and particularly, that the habits and character of the negro population *ought* to have improved in a greater ratio, whereas they have, in several respects, deteriorated.

It is rather remarkable that whenever an attempt is made to prove that the negro population of these colonies has progressed, a comparison is established between their past and present condition—between the slave and the freeman—but this is not a sufficient proof of an actual or positive progression; and after sixteen years of unconditional freedom something more tangible might certainly be expected. Whenever the question is discussed, surprise is invariably expressed that the negro population has made any advance whatever under the circumstances, and that sugar cultivation was not altogether discontinued. "It is surprising," says Mr. Martin, "that sugar cultivation was continued at all after emancipation, and still more remarkable that, in the efforts to provide for their daily bread, the negro population should have raised themselves from their former degraded position." It is evident, that persons so much pleased at what did not take place, must be perfectly satisfied with the present condition of the emancipated class, and will not willingly listen to the complaints

of those who contemplated better results, but who, nevertheless, are not at all astonished at the present position of affairs. Had sugar cultivation been discontinued, things would certainly have been still worse than they are: forasmuch, as "the progress and prospects of civilisation in these islands are," as has been judiciously observed by the Governor of Jamaica, "closely interwoven with the continuation of a branch of industry to which European capital and skill have, from the earliest period of its history, been mainly devoted; and because it seems clear that the same economical conditions required to restore a fair ratio of profit to sugar planting would be necessary to render any other species of cultivation whatever remunerative." And, I will add, because sugar cultivation is, from its very nature, more calculated than any other occupation in this climate to induce industry and create habits of steadiness, as well as to keep up a regular and profitable commercial intercourse with those countries, the influence of which all sensible men must concede, is, and will, for a long period, be necessary to the development of civilisation in these islands.

I confess I do not fully understand or appreciate the sense of what is meant in reference to "the efforts of the negro population to provide for their daily bread;" for how could that *negro population* subsist without those efforts? And were they not the best guarantee of gradual improvement and future comfort? or, is it meant that the emancipated had no time left for acquiring the rudiments of instruction? But, if these elements of primary instruction are a symptom and a consequence of civilisation, they are not, thank God! indispensable to moral improvement.

After all I have said regarding the general condition of the liberated class, it now remains for me to add a few remarks on the character of the African race as exhibited in these colonies; such hints may prove useful to future legislators.

Be it the result of slavery, or of natural disposition, or of both, the African does not seem to understand the motives and the object of law. He would not decide a case on principle, but on circumstantial considerations. Whenever he is wronged, he finds the law is not severe enough; but, as the offending party, he is amazed at its severity. In his own favour, he wishes it to exert a spirit of revenge, and does not seem fully to understand that, in its application, it must be impartial, and be governed by immutable principles. Should justice be done him, he is still unsatisfied and unconvinced, because that justice was not awarded according to his own views; to realise his ideas, the law must avenge him to the utmost extent, and independently of all extenuation. So truly predominant is this peculiar disposition of the African character that nearly all the heinous crimes he commits have no other cause or source than his exaggerated conception of justice; Shylock-like, his revenge is implacable, but he moreover

exacts it tenfold. An African labourer, who may have received an offensive epithet from his employer, or some other trifling injury, will satiate his vengeful passions by firing a magass, or curing house, or perhaps the dwelling of the offender. It would be unfair to pretend that this is a characteristic of the African alone, for it is still more strangely delineated in the Javanese race, and the more civilised inhabitants of Corsica and Italy generally; with this difference, however, the Africans aim more at the property, the others, mainly, at the person.

The negro appears to nourish a great dread of the watchful eye of a protecting law, and, as a consequence, has the greatest reluctance to aid in the discovery of crime, unless he has very strong personal motives for so doing; he has, besides, a sort of supernatural dread of a daring criminal, and, the more dangerous to society, the more certain is the culprit of escaping detection and punishment. The fact is this: the African is wanting in moral courage, and he willingly submits to the chance of being deprived of the blessings of civilisation, provided he be not required to fulfil the obligations it imposes.

Considered in domestic life, the negro has many defects, and not a few capital faults. Since emancipation, marriages are much more frequent among all classes than they were during the period of slavery; an increased desire exists to engage in its bonds, for marriage is regarded as a claim to respectability. The respect manifested towards this rite is, so far, a good symptom, but let it be added, that in no part of the world, perhaps, are the obligations of marriage less binding than among the lower orders in these colonies, since a husband and wife, very commonly, and too often, by tacit consent, live unblushingly in adulterous intercourse. I need not point out the pernicious consequences which such principles must necessarily involve. Whenever domestic associations are not framed on a Christian basis, society is sapped to its very foundation; strife and hatred ensue, children are disowned and abandoned, industry and economy are out of the question, whilst ignorance, vice, and poverty are the inevitable results.

The African is exceedingly, indeed blindly, attached to his offspring, and yet he cannot be said to be a good parent, inasmuch as he is governed by mere caprice; at times indulging and spoiling his child beyond all measure, or in rage approaching madness, punishing him with the most savage barbarity. In the latter case, should any interference take place, he pertinaciously exclaims, "his child is his own, and he can do with him as he likes." He is, withal, exceedingly jealous of his paternal authority, and, of course, feels highly offended should his child be chastised, or even reprimanded, by those who may have the authority to do so. Negro children are, as a consequence, self-willed, impudent, and most disobedient; in fact possessing all the faults of the Parisian *gamin*. As

soon as a youth of this class is able to provide for his own wants, he generally abandons the paternal home, considering himself perfectly free from all filial obligations.

There is another salient defect in the emancipated class, and which became particularly manifest during the prevalence of cholera. Though very punctilious on the score of respectability, the negro is, nevertheless, exceedingly indolent, and the moment he can rely on the aid of others, will not even endeavour to exert himself; this is, to a certain extent, common to all creoles. A strong inclination also exists, on the part of the black, to consider all acts of benevolence exercised towards him as his due, and not in the light of a favour. I know of individuals of this class who, during the cholera, with their small apartment well furnished, or receiving abundant aid from their employers, would yet regularly apply for their meals at the charitable soup-kitchens established for the relief of the destitute, not that they really required them, but only because "they would have their share;" nor did the same persons blush to say, "Since a man must die one day, he had better die now; then he has neither to pay for medical attendance, medicines, coffin, grave, or funeral."

Slavery, with its degrading influence, I readily concede, must have contributed largely to the implanting of the above-mentioned defects in the negro character. During slavery, marriage was not exactly discouraged; but, as it was generally allowed only between individuals belonging to the same estate, the consequence was that marriages were the rare exceptions, and concubinage the general rule: in addition to this, the slave possessing no civil right had no interest, as he had no benefit, in any civil contract; and it is well known that habits contracted during ages cannot be uprooted in a few years. Again, the slave had very little authority over his children, the care of them being left to him only in their infant state; these children, on the other hand, being bound to obey and serve the master, were actually led to cast aside the respect and attention due to the parent. Slavery had in this, as in other cases, a fatal tendency to relax the natural as well as the civil ties; and it is not surprising that its effects are still felt, after only sixteen years of freedom.

I think it, therefore, due to the negro to say, that those vicious features of his character which I have portrayed, are more the offspring of ignorance and the consequences of a protracted state of debasing bondage, than the effects of a wicked and perverse nature. For, however prominent their faults, and, at times, heinous their offences, it is notorious that they do not approach to that degree of moral turpitude which characterises those of the same class in Europe. The crimes committed by the negro generally spring from sudden impulse and ungovernable passions, and are not the result of base and selfish calculations. Seldom

have we heard of *life violated* for the acquisition of money, in this country. They are, besides, *charitably disposed*, and ever ready to assist the destitute and needy in proportion to their own helplessness. But if their vices do not assume as dark a shade of moral perversity as those of the European, doubtless their qualities, in regard to all the degrees of social obligation, are far inferior to theirs. Such is my conscientious estimation of the merits and demerits of the negro, as they are exhibited in these colonies. He is, and must be, responsible, to a great extent, for his faults; but those who are responsible for the instruction of his class must bear the blame.

"The great wants (in a material sense) of the West Indies, at the present time, appear to be," says Mr. Martin, "a resident proprietary, with capital; an increased amount of skilled labour, improved methods of cultivation and manufacture, and a sound monetary system. There is abundant room for small farmers, whether white or black, were it only to raise provisions for home consumption, instead of importing them from the United States, and thus depriving the colonists of current monies, obtained from Europe in return for produce. With regard to capitalists, whether large or small, an area of 175,000 square miles of territory, in which there is little more than a million inhabitants; or about six mouths to each 640 acres, presents a wide field for commercial enterprise." I have very little to add to this, except that Mr. Martin, after pointing out the evil, should also indicate the remedy; but instead of that, he seems to be satisfied with criticising the poor West Indians. "It will perhaps be answered, that increased labour is required for increased production; but the deficiency of the West Indies, in this respect, though the favourite stalking-horse of the colonists, is far from being the sole or even the greatest obstacle." And yet in the teeth of this, he himself declares "there are only about six mouths to each 640 acres!" "They want the spirit of progress and improvement which is the characteristic mainstay of England; of her oldest colony—the United States; and of her youngest—Australia. They want improved machinery, economical methods, and a few trustworthy and energetic men to set reforms on foot. In the Spanish, French, and Danish West Indian colonies, improved machinery has been sedulously introduced; but, excepting on a few estates, comparatively little has been done in our territories. For instance, the Woodbrook Vertical Mill, in Trinidad, yields 35 per cent. of saccharine liquor from the compressed cane." The "Woodbrook Vertical Mill" was changed some nine years ago for a horizontal mill, from which 75 per cent. is obtained, as in Cuba, out of *ninety* contained in the cane; in fact, the mill at present on the Woodbrook, is as fine a piece of machinery as can be seen in the West Indies. As to the 83 per cent. arrived at in Guadaloupe, that *maximum* was

obtained from some experimental proceedings, and altogether on a limited scale.

Mr. Martin says, that whilst "In the Spanish, French, and Danish West Indian colonies, improved machinery had been sedulously introduced, comparatively little has been done in our territories;" because, as he alleges, the British colonists "want the spirit of progress and improvement." But is this the real cause? or are the British colonists more supine than the inhabitants of those foreign colonies, or less alive to their own best interests? This would be, forsooth, a most unaccountable exception. Before proceeding, however, to further explanation, I must remark, that improved machinery was introduced in the French, Spanish, and Danish colonies during the existence of slavery in those islands; that, in Java and the Mauritius, from cheapness and abundance of labour, cane cultivation is no longer the precarious occupation it still is in the British West India colonies; and that the abolition of slavery first, and next, the Equalisation Act of 1846, by tendering actual and prospective encouragement to the slave colonies, have therein called forth capital, industry, and improvement, whilst they were creating actual difficulties and prospective embarrassment for the British islands. Moreover, improved machinery was introduced into the French islands by companies; in Java, by the "Dutch Commercial Society." These are the causal agencies in the more rapid advancement of the foreign colonies; and the following reasons will also account for the apparent apathy of the British planters. Already in an impoverished condition—some of them utterly ruined—money could with difficulty be obtained, and that only at the most exorbitant rates; and not only was the price of sugar meanwhile diminishing, but actual and prospective changes were acting as a check to the introduction of costly improvements. On the other hand, no British capitalists would venture to come forward in aid at this important crisis—though such aid was readily tendered to Java and the French colonies—undoubtedly, because they were aware that these islands had been rendered an unremunerative field.

The West Indians have been, in general, treated most unmercifully, and without reference to the peculiarities of their position, by those who have spoken or written on the question. When they were judged as agriculturists, for instance, neither the climate nor the conditions of intertropical agriculture were ever taken into consideration. Their system was weighed according to the same rules which were found most applicable to European tillage; and yet, the climate and the very nature of intertropical cultivation have a very great influence on the most superior methods of conducting agricultural operations.

The almost uncontrollable luxuriance of vegetation, within the torrid zone, renders it necessary to have labourers constantly en-

gaged in field work; whilst, under temperate zones, vegetable life is dormant for four or five months, during which recess the labourer may be employed under shelter, and in various other occupations. Moreover, under our zone, heavy rains or extreme droughts act as an obstacle to certain agricultural operations. Again, nearly all our crops require weeding, an operation which is but seldom performed in Europe; for, the cereals which form the basis of European agriculture, once sown, are allowed to grow and arrive at maturity undisturbed; so that the same extent of land requires, in the colonies, more constant care and attention than, for instance, in England or France. Nearly all our cultivated plants are perennial: which makes it very difficult—if not impossible—to establish a system of rotation of crops, as where annuals are raised. Some of our plants—even such as the cacao and coffee—do not commence yielding a regular crop, except after a term of five or eight years' growth; so that, even should an agricultural article become almost valueless in the market, the planter is still under the necessity of continuing its cultivation. And with regard to a sugar estate, its entire management resembles more that of a manufactory than of a farm; and field operations are suspended for five or six months, in order to manufacture the juice of the cane into sugar. Thus, the sugar planter is subject, at the same time, to all the casualties attendant on the pursuits both of the manufacturer and of the agriculturist. These may be said to be natural conditions which cannot be changed; but there were others of an artificial kind, against which the planter had incessantly to struggle.

Under the system of slavery, man was regarded and employed as a mere mechanical agent; and the planter—who, immediately after emancipation, required skill in the tillage of the soil, and intelligent labourers who could understand and profitably adopt improved and efficient methods—was compelled to rest satisfied with the mechanical aid of the very class he had kept in a state of ignorance and serfdom; and, where initiated, active, and willing agents were necessary, he found obtuse, indolent, and, above all, capricious instruments. Was this the fault of the planters? No —It was the bequest of slavery.

Again, on what terms were proprietors compelled to employ these agents? It may be said that, during the existence of slavery, there were but two distinct classes in the colonies—the slaveholders, and the slaves; for, many who were not possessors of estates, were nevertheless owners of slaves. Many of the labourers, soon after obtaining their liberty, left their masters' property and began to erect small cottages on unoccupied lands, or on small portions purchased by themselves; the majority, however, continued to live on the estates, actually occupying houses and lands free from all rent, and yet exacting from their

masters whatever wages they thought proper — the greatest number of them receiving from forty to fifty cents (1s. 8d. to 2s. 1d.) per measured task of field work.

The task system, which had been adopted in Trinidad on nearly all cacao, and on several sugar plantations, during the period of slavery, was almost immediately afterwards enforced on all other estates; and in few cases only, did an able labourer take more than *four* hours to perform the allotment—some of them ranging as far as from two to two and a half tasks per day. In nearly all the colonies, the planters were necessitated to submit to the terms of the labourers; the consequence was, that the greater number of planters who had been extricated from their liabilities by the compensation grant, became soon involved to very large amounts—especially those who had attempted the introduction of improvements. On several estates, the labourers lost their wages—their employers having been ruined; and, let me remark here that, under those trying circumstances, the labouring class, generally, behaved very generously—many of them continuing to work for several months without exacting or receiving wages. Lest they should be soon placed in a similar position, the other employers, compelled by necessity, began to give less wages, and to exact more work; the labourers, thereupon, became dissatisfied, and the emancipated population began gradually to retire from estate to field work. It was about this period, and in consequence of this movement, that they were ejected from the houses and lands they occupied on estates, and their provision grounds destroyed.

"During the past two years," says Lord Harris, "great exertions have been used by sugar growers here, to lower the cost of production through a diminished rate of wages, and by getting more work performed; this has caused dissatisfaction among the labourers, and increased their migratory and idle inclinations, which has resulted in a visible inattention to their provision grounds—an evil of serious import, operating unfavourably against reduced cost of production, by rendering the labourer totally dependent upon high money wages to pay for imported articles of consumption, an alarming position to be in with the prospect of curtailed employment, through sugar cultivation being diminished."

"The general excuse offered by the labourers for their inattention to raising provisions is, that they are liable to be robbed and turned off estates. True, this is the case; but the latter is invariably caused by their own fickleness and perverse acts."—(Lord Harris to Earl Grey. April, 1848.)

Could the planters exercise any control over such circumstances? They *did* struggle to the utmost of their power, and, as a class, they are more worthy of praise than of blame.

The West Indies *do* require increased labour, whatever may be said to the contrary, and their deficiency in this respect is certainly the greatest obstacle to their progress. Listen to the Governor of Jamaica:—"Let us remove all obstacles to their recruiting the ranks of their labourers from other countries; let us go further, indeed, and take active steps to set on foot an immigration of the negro population of the United States at the public expense."

I will quote Governor Barkley once more, for all he says concerning Jamaica is applicable to the other islands:—"Far from deserving the imputation of supineness and ignorance of their business, which it has been too much the fashion to lavish upon them, I found the planters of Jamaica as eager to introduce new machinery, and to adopt new processes of manufacture as any of their competitors, British or foreign—and I have had more opportunities than most persons of observing both—and this at least I can safely undertake to assert, that, if they fail, it will not, in the majority of instances, be for want of exertion on their part. . . . . I derive no small hope for the future from the spirit of enterprise and intelligence in which the sugar plantations that remain are being carried on." This assertion, by one who "has had more opportunities than most persons" of observing the eagerness of the colonists to introduce new machinery, and to improve manufacture, must have, in the eyes of impartial judges, more weight than the allegations of those who prefer following the example of imputing "supineness and ignorance" to the colonists, instead of examining into the merits of the case. Are they aware, besides, that with improved machinery we must introduce skilful mechanics? That from want of skill and engineering art, we cannot repair and keep our machinery in proper order, or execute the improvements which experience may have suggested, whilst the poverty of nearly all classes renders it very difficult, if not impossible, to send natives home for adequate training as engineers? This is the true position of affairs in these islands; and some of them are even worse situated than others in these respects.

"Skill and capital are urgently needed," says Mr. Martin, "to render the West Indies a remunerative field of production; bring them, and labour will assuredly follow, as it invariably does, whenever men may depend upon obtaining a fair day's wages for a fair day's work." Verily, "skill and capital are urgently needed to render the West Indies a remunerative field of production;" but how can we bring them when our staple produce is a mere drug in the home market, when we are compelled to compete with countries which are protected in their own markets; and, further, are admitted on equal terms in the British markets, many of them possessing the instruments of production at a much

cheaper rate than ourselves?—and when these islands, by the natural course of events, and the system of censure so pitilessly followed up regarding the West Indians, are pointed out as a precarious and worthless field? Let those who take an interest in the welfare of these colonies and their inhabitants, listen to the spirited appeal of the noble Governor of Jamaica:—"Be it their task to encourage our efforts by every means that legislation can present, and to smooth, as far as lies in their power, the inevitable difficulties of a competition which, aggravated as it unfortunately is at the moment by extraneous influences, threatens to prove even more formidable than could have been previously anticipated." What means legislation can present, and what measures may be adopted to relieve these colonies, I shall now examine. *Nil desperandum!* for we have already passed through the ordeal of emancipation, and it now remains for Brazil, Cuba, and Puerto Rico to undergo the trial.

It is an axiom, I believe, that no form of government is absolutely bad or absolutely good; that concomitant circumstances may render the worst form adapted to the wants of a people, whilst the best, from adverse accompaniments, may turn out a disastrous experiment, or a complete failure. And, yet, it is remarkable, that in the framing of laws so little attention is paid to national peculiarities arising from differences of race, previous social institutions, the general occupations of the inhabitants, and climate.

It has been remarked, in reference to climate, that people inhabiting the warmer regions of the world are prone to idleness, and yet quick and passionate in disposition, that they are impatient of restraint, but care little about the essentials of liberty, and willingly submit to a despotic rule, provided it be, however, of the monarchical form; it seems, indeed, as if they are not energetic enough rightly to discern or promote their own true interests. In fact, they are too indolent and, though a paradox, too volatile to devote to public affairs that constant attention which alone can avert the yoke of despotism, and too violent and headstrong to yield to the saner opinion of others. I must go even further, and say, that whenever not under absolute control, or the moment they are released from despotic rule, they rush into anarchy; in their case despotism or anarchy is the only alternative. The inhabitants of fertile regions, under a mild climate, generally prefer agricultural pursuits; those who live in barren countries are more inclined towards manufactures, trade, and commerce.

The differential characteristics of races are almost indelible. The Arabs of the present day are not only the fac-simile of the Saracens, but of the mixed descendants of Ishmael and Esau. The Tartar hordes of northern Asia preserve identically the

nomadic and plundering habits of their Scythian ancestors: the Kabyles of Algeria are true to their forefathers, the ancient *Numidæ*, and Abd-el-Kader has acted, for several years, in the province of Oran, the part that Jugurtha played in the time of the Romans. The natives of Spain, who battled to the last against the Romans and Moors, for the preservation of their independence, have, in our days, fought with the same indomitable courage and perseverance, and with better success, against the great conqueror, the MAN OF DESTINY, of modern times. The *Juria Francese* involuntarily brings to the mind the *impetus primus* of the ancient Gauls; the *Northmen* are still the hardy sailors and adventurous traders of the world; and the migratory propensity of the ISLANDERS and Germans may, to a certain degree, explain the restless incursions of the Barbarians into the south of Europe. The meek and timid Hindoo has always been addicted to agriculture, and the wild son of Africa to nomadic life and predatory warfare.

The influences of social and civil policy are too evident to require elucidation, though they may be said to have their foundation in climate, peculiarities of race, and religious institutions. Who, by drawing a parallel between the United States of North America and the numerous republics formed out of the dismemberment of the extensive Spanish colonies in North and South America, is not struck with the quiet self-government of the former, and their consequent prosperity, as contrasted with the periodical commotions of Mexico, New Grenada, Venezuela, Peru, &c., all fomented by some ambitious or disappointed leader —and their consequent state of depression? This striking contrast has been attributed to the difference of lineage or descent, and the Anglo-Saxon family has been proclaimed as the sole race to which self-government is adapted, in the New as well as in the Old World. And, truly, it cannot be denied that the many attempts made by the other races to import the system of self-government have issued, more or less, in abortive, if not actually calamitous results. But it does not seem to have been suggested that the people of Mexico, Guatimala, Peru, &c., are an intermixture of Indians and Spaniards; that those of New Grenada and Venezuela, are an amalgamation of elements still more heterogeneous, viz., of Spaniards, Indians, and Africans—the former forming the minority. The only republic of South America, where the Spanish or the European element predominates, is Chili; and Chili is, and has been for years past, quiet and prosperous—the above facts showing but too plainly the great influence of races. The observer may find some differential characteristics in the civil strifes of New Grenada and Venezuela, where the African element is in large proportion, as compared with Mexico and Peru, where the Indian under-current prevails.

The spectacle afforded by these republics, dragging on a miserable existence, though favoured with immense and rich territories, rich mines, and still richer vegetable productions, is an impressive lesson to those who desire to study the history of mankind in its various phases. Had these beautiful and fertile countries passed, from the despotic rule of Spain, under a wise and progressive monarchical system, instead of entangling themselves in the complicated machinery of self-government, they would now, in all probability, be thriving states, and blessed with a peaceable and industrious population. Look, for instance, at Brazil — that remarkable and striking exception; look at the Argentine republic, under the dictatorship of Rosas; at Mexico, under the rule of Santa Anna; look even at the St. Domingan republic, under Bozer, and the Haytian empire, under Soulouque. Is it not remarkable that things have succeeded better where self-government has not been permitted or established?

Some persons might feel inclined to adduce the British West India islands as an example of successful representative government. But these colonies cannot be said to enjoy that form of administration; for first—the governor, or head of the executive, is nothing else than a commissioner appointed from Britain to administer the affairs of the colony, over which he presides; secondly—all the measures adopted by the Houses of Assembly, in the different islands, ere they become law, must receive the sanction of a council of government, the members of which are nominees of the crown—that is to say, of the governor—some of them being actually public officers; so that governmental influence is to be traced to the mother country, and does not reside in the colonies themselves. The privileges enjoyed by the chartered colonies more resemble municipal institutions than self, or even responsible, government. That form of constitution has therefore answered well, because it is better suited to these islands than a more liberal system; and I do not entertain a doubt that, should these colonies be freed from the control exercised by the home government, prejudice and hatred—engendered by reminiscences of past wrongs, and antagonism of races—would create an effervescence in the body politic, such as almost instantly to produce a dissolution of the entire framework of society.

But paramount to these, are religious institutions; and religion has, evidently, the largest share of influence on the destinies of mankind. It may be truly said, that wherever Christianity has obtained an ascendancy, there civilisation has penetrated, together with its blessings—for, Christianity alone holds the secret of man's destinies; and it is remarkable, that the civilising influence of religion is in proportion to its accordance with Christianity.

Of Judaism I will say nothing; but look at Mohammedanism; though its doctrines of fatalism must tend to stifle the feelings of responsibility, yet its precepts of charity and devotion, and its promises of an after-life remuneration tend to create a disposition to mutual support which makes its votaries more civilised; and proofs of that beneficial influence we may find in those tribes of African, Hindoo, and Malay races which follow that religion, in opposition to the ridiculous and cruel superstitions of Buddhism, Brahminism, or Fetichism. The influence of religious institutions is, perhaps, still better illustrated in the various Christian sects. Roman Catholics, being especially attached to the principle of supremacy, seem to be better fitted for the monarchical form of government, whilst to Protestants, who have adopted the principle of individualism, the system of self-government appears best suited.

I would not be understood to say, that our laws should be framed rigidly in accordance with the above considerations, as upon unvarying principles; but I maintain, that they ought to be taken into account, whenever laws are being prepared for the government of these colonies. Legislation improves, and is improved by, civilisation; but civilisation cannot spring in full maturity and vigour from legislation, as an armed Minerva out of a Jupiter's head. It is the privilege of Christianity to educe it from any material; this is the grand and only agent which can with certainty be brought into operation, in all cases, and under every form of government.

It may be well for those who have imbibed the truths of the Gospel, who bask in the sunshine of Christian civilisation, and who relish the savoury fruits of the tree planted by their forefathers, to pretend or assume that Christianity has done its work, and must now give precedence to other systems or institutions resulting from the progress of ages; but, those who pause to consider humanity in general, under the reign of idolatry and Paganism, or even of Mohammedanism—who witness the supernatural results of Christianity, particularly in its taming and civilising influence on the wildest and the most ignorant tribes, are induced to regard it as the chief, because the most powerful and the surest, agent in procuring tranquillity for nations and rendering them prosperous and happy. The fruits of Christianity are not like those of human institutions; they derive their savour from a supernatural sap. I am bound to state, that all the agencies which impart life and grandeur to the social agglomerations of modern times—natural justice, mutual assistance, equality in the advantages and burdens of civil society, individual freedom, the steady progress of man, &c.—all are the fruits of Christianity. For, it cannot be denied that Christianity has snatched the world from under the baneful yoke of paganism, wherever it has made its appearance;

and that the worship of one holy God—Creator, Saviour, and Sanctifier—with all its rational consequences, all its beneficial emanations, all its social applications, that is to say, that sublime philosophy of the natural law, of which the grandest genius of antiquity had but a glimpse—has become, through the teaching of the Gospel, a practical science for all indistinctively, the vulgate of all nations, and diffusive as the atmosphere in which we breathe and move. It is also certain that wherever Christianity has not yet penetrated, the same frightful superstition and gross idolatry, which in former ages overspread the entire world, are still prevailing; that countries—once enlightened by the Christian doctrine, and which under its influence shone with all the brightness of intellectual greatness and practical virtues—have since, by repudiating its dictates, sunk into the abjection of degeneracy, and have remained in the darkness which ensued on their extinction of the lamp of Christianity. Asia and Africa will supply many examples of this; indeed that activity of our moral, intellectual, and social faculties; that progressive development of high conceptions, useful aims, and human fraternity, which constitute civilisation, are the result of an attractive power in Christian institutions, springing up wherever the latter are planted and fostered, disappearing or reappearing with them, retrograding or progressing, according as they are more or less respected.

During the time of slavery, no sort of religious instruction was afforded to the slaves; and the little they ever learned of Christianity was derived from the prayers taught them by their masters, or the sermons—few and far between—addressed to them, on occasional sabbaths, by the ministers of religion: but even these small crumbs fallen from the table of Christianity, have nourished and improved the minds of the wild Africans to the extent we have seen. And let me remark, that those who have received more direct and constant lessons, have shown themselves by no means unworthy of their high and holy privileges; whilst, on the other hand, those who have been deprived of those means of instruction have evidently been declining in the scale of morality, civilisation, and comfort. Such being the case, ought not the local authorities and the home government to encourage, by all means, the diffusion of Christianity, and aid those who have the peculiar charge of preaching evangelic morality and Scripture truths? Not only will they thus indirectly lead the people to be peaceable, but they will also, by teaching them their duties, contribute to form—of not inapt materials—useful members of society, faithful subjects of the crown, industrious and saving communities. Now, the question is, how can the Government cooperate in the diffusion of Christianity, and aid its ministers therein? Simply by being impartial, and by "rendering to Cæsar the things that are Cæsar's, and unto God the things that

are God's"—that is to say, by granting full liberty to the ministers of religion in everything concerning religion; and by placing at the disposal of the tax-payers, for ecclesiastical purposes, their full share of the funds they may contribute to the general revenue of the country.

I do not wish to enter into an examination of the merits or demerits of church establishments; but I dare conscientiously affirm, that in comparatively newly-settled countries, and particularly in small communities like ours—impoverished as they are and struggling for their very existence—state churches are an invidious, unjust, and impolitic institution; it ought therefore to be abandoned for a more liberal and equitable plan. If tax-payers are entitled to a share of the funds contributed by themselves, it is to such portion as is applicable to the provision of those wants which are most essential, and to the furtherance of those interests which are dearest, to human nature. The course to be adopted by the Government appears to me very simple and plain: it ought to extend an equality of protection to all denominations; and this line of policy seems clearly to be dictated by the very circumstances of the case. Such protection may be afforded in various ways: 1st, by granting a certain stipend to each clergyman; 2ndly, by voting a general fund for ecclesiastical purposes, and distributing the same to the different congregations, allowing to each a sum proportionate to the number of its members; or, 3rdly, by withdrawing all salaried allowances from the clergy, but supplying them with a comfortable residence and suitable glebe—leaving to their congregations the duty of their maintenance—and by erecting churches where sufficiently large congregations exist.

I am aware that many would prefer the system of voluntary contribution, and would do away with all aid from the state. But, not only are we not ripe for the voluntary system, but the inhabitants of these islands are in too straitened a position to be able to maintain a respectable and efficient clergy at their sole expense. The voluntary system has also, in my opinion, the very great inconvenience of placing the minister of religion at the mercy of his flock, and of rendering him, to a certain extent, subject to, and dependent on, their pleasure, even in things pertaining to religion.

The system now followed—of giving a certain stipend to each clergyman, or of attaching a salary to each parish—has, on the other hand, the disadvantage of rendering the clergyman too dependent on Government, and too independent of his flock; it has also the defect of opening the door to captious demands—now for a curate, next for a church or a parsonage—thus creating a discretional source of expense to the colony.

The system which would provide parsonages and lands for the

clergy, and churches for the people, has, in my opinion, many advantages. It affords direct relief to the tax-payers, and material aid to the congregations; the minister being provided with a comfortable dwelling and a few acres of land, will require but little from his parishioners, who could thus, by direct and indirect means, easily provide for his maintenance. He would not be wholly dependent on his congregation, but quite sufficiently so to create that sort of mutual dependence which must engender kindly intercourse.

I, however, prefer the system which would provide a general fund for ecclesiastical purposes, and would distribute the same among the different Christian congregations, according to the number of individuals belonging to each—the application of such funds, to the best interests of religion, being left to the congregations themselves and their clergy, or to committees formed for the purpose; satisfactory guarantees being, however, given that the sums contributed from the public treasury shall be applied to the sole purposes for which they are voted. These funds might be applied, 1st, as a provision for the clergy; 2nd, to the building or repair of parsonages; and, 3rd, to the erection or repair of churches. I regard this plan as the safest, the most impartial, and, from all appearances, the most beneficial in its results. The most objectionable system is, evidently, that which abundantly provides for one church, and refuses all aid to others. For, that which, in this respect, may be deemed wise and politic in Great Britain, is unjust and supremely unwise in countries situated like ours, where there already exist too many causes of discontent and division.

I have already stated it as my opinion, that legislation has very little power in the development of civilisation where the latter does not, in some measure, already appear; and that the best enactments, if not adapted to the requirements of a people, will not only make them discontented, but may render them miserable; whilst judicious laws and ordinances, well adapted to the *status* of the community for which they are intended, will command a ready compliance.

Legislation affecting the interests of these islands may proceed from the mother country, or originate in the colonies themselves. Legislation from the former may affect commercial or general matters; but, under present circumstances, we cannot expect much from our national parent. We cannot, for instance, expect that any alteration should be made in the commercial policy of Great Britain, to suit our position; but we have a right to ask for an extension of the principles of free trade to our staple products. To mention sugar only—it is but too evident that the duty on that article ought to be reduced; for, we at present pay an *ad valorem* impost of, at least, 100 per cent.

on sugar of average quality; the duty now stands at 12s. or 2 dols. 88 cents.; and sugar of what is called *fair* quality, sells in the colonies at from 2 dols. 50 cents. to 2 dols. 80 cents. So monstrous is the injustice, cloaked under the plea of revenue, that, unless we admit such an impost as intentionally directed against us, I cannot understand how it could have been so coolly sanctioned by a British Parliament. I have heard it said that the colonists would gain very little by a reduction of duty, because such reduction would only influence the home consumption. But even this, small as it may be, would still be a clear gain; and it is evident, from the example of the United States, that the consumption consequent on this reduction, would greatly increase in the United Kingdom. Let me here offer one suggestion to the people of England: a diminution of duty on sugar would benefit them—the inhabitants of Great Britain—whilst the rest of the world are those advantaged by the system now adopted as regards all commodities admitted free. I am not *au fait* as to what may be the position of landed property in the other colonies, but I can affirm, as regards Trinidad, that the following estimates are correct. The expenses of a sugar estate, producing 200 hhds., or 360,000 lbs. of sugar annually, may be set down at 9,000 dols., and the value of such an estate estimated at 25,000 dols. At 250 dols. per cwt. the 200 hhds. of sugar—casks comprised—will yield 10,000 dols.; 100 puncheons of molasses, 1,500 dols., grand total 11,500 dols.; deduct 9,000 dols., there then remain 2,500 dols.; deduct an interest of 8 per cent. on the value of the property, and the result is 500 dols. for contingencies, improvements, &c. I have taken, as an example, a sugar estate making 200 hhds. of sugar, and skilfully managed; those making more are in a better position, but those making less in still worse.

Now, as a sugar planter cannot turn his sugar estate into a cacao or other plantation, without great loss, he must struggle on, hoping even against hope, till ruin overwhelms him; the estate will then be abandoned. This process, which has been going on in Jamaica, Dominica, &c., and which has rendered those colonies worthless, must, I fear, commence in Trinidad and Demerara, for sugars selling at 2 dols. 50 cents., here as elsewhere, the result must be the same. Let me therefore state, in the words of the "Economist," that—"It is clearly not to the interest, even of the consumer, that prices should be lower than the fair relation of supply and demand justifies, inasmuch as such a state of the market would discourage those necessary supplies, which may be hereafter required." But, even admitting that a reduction of the present duties would not influence the price of sugar in the colonies, this act would tend to prove that the British Parliament is desirous of dealing fairly towards the colonies. But as long as the present system is persevered in, so long we have reason to

complain of unjust treatment; to protest that, though forming a portion of the British nation, we are worse used than the slave-holders of the United States and Brazil—whose cotton, hides, and dyes, are admitted duty free, whilst we are made to pay an *ad valorem* duty of 100 per cent. on our principal, nay only article of commerce. The British public have therefore every reason to mistrust a policy which evinces a determination to aid in the ruin of these islands.

But a reduction of duty on sugar is not the only step which the Government ought to take, nor the sole act of justice to which we are entitled. It ought also to alter the legislative acts relating to refineries, and the use of sugar and molasses in distilleries. It is again contended, that great difficulties are to be encountered in the adjustment of such changes. I am not sufficiently acquainted with the details of legislation on those matters to offer any comment thereon here; but I make bold to say, that such difficulties ought not to deter the Parliament from framing just and appropriate laws—such, in short, as might aid in saving British possessions from utter ruin, and the emancipated class from consequent barbarism. British legislators, I opine, are, or ought to be, too familiar with such difficulties, not to be able to make such provisions as would ensure the rights of the treasury, without injuring either the interests of the producers in the colonies, or of the consumers at home. If the British Government wishes to be just and impartial, let it place the Queen's subjects of the colonies on the same footing with those of the fatherland; and why, in the name of equity, should not our sugars and molasses—the duty once paid—be as free in the markets of the United Kingdom, as is the slave-cotton of Brazil and Louisiana?

The British Parliament can do more still, through the powerful engine of legislation. I have already adverted to ecclesiastical matters, and suggested what might, and ought to be done; I now turn to subjects connected with the purely temporal prosperity of the colonies. To this end, every facility should be afforded for the acquisition of emigrants—either by adopting some comprehensive scheme for the increase of a labouring population, by entering into arrangements with the United States for facilitating the introduction of the free people of colour, or by removing all difficulties in the way of East Indian immigration; in fact, by opening up every channel through which population may flow, in a continuous stream, into these islands.

Both the changes in the social condition of these dependencies, and also the commercial policy of Great Britain, require correspondent changes in the general constitution of the West India colonies. As matters stand, they now form six distinct governments: the Bahamas, Jamaica, Antigua, and the Virgin Islands—viz., Anguilla, St. Christopher, Nevis, and Montserrat,—

Barbadoes, and part of the Leeward Islands — viz., Dominica, St. Lucia, St. Vincent, Grenada, and Tobago, Trinidad, and Demerara. All these colonies are independent one of the other, and have their respective constitutions varying in each; and not only does each colony differ in method of government, laws, &c., but each has its governor, or lieutenant-governor, and a wholesale staff of public officers. Tobago, with its 15,000 inhabitants, has the same number of superior public officers as Jamaica; also, in addition, enjoying its House of Assembly, with power to make laws; whilst Demerara and Trinidad are crown colonies. In fact, things are so arranged, or rather so disordered, as to facilitate a waste of as much money as possible, and the creation of as untoward laws as are conceivable. The public establishment of such colonies as St. Christopher, Nevis, Monserrat, Tobago, &c., are evidently disproportionate to their resources; and it is morally impossible besides, that from their scanty population men can be selected really capable of framing salutary laws, or of acting in other respects as legislators.

So foreign and remote are the relations existing between the different colonies, that the inhabitants of Trinidad are better acquainted with events in Europe, and even in China, than with those in the Bahamas or Jamaica. Again, so diversified and dissimilar are their laws in general, and the regulations of their courts of justice in particular, that a barrister of good repute in Trinidad would be obliged to undergo a fresh training, before practising in the neighbouring colony of Grenada. And yet the interests of these different islands are almost naturally identical: they must rise or sink together. It has, therefore, become imperatively necessary, that these different colonies should be homogenized; that they should be brought into mutual relation and contact; so that the least advanced may profit by the experience of those that are more precocious; that their natural resources should become known, and their individual wrongs be felt and acknowledged as the wrongs of all: thus, and thus only, will they be able to afford each other aid and support in difficulty and distress. This, however, can only be done by forming a political union of the scattered colonies, with a federal colonial parliament, or joint house of assembly.

I have come to this conclusion after mature reflection; and I am fully convinced, that the proposed change would be for the advantage of the colonies, both in a financial and administrative point of view. The parliament or general assembly should consist of representatives from all the different colonies. These deputies might be elected either by the local assemblies, or by a board of electors holding higher elective qualifications than those of the local assemblies. The members of the general assembly would be entitled to a daily allowance, to be contributed by each

colony respectively, during the whole period of the session—such session to be limited to a certain duration. These sessions should be held in the most central island, and should decide only on general matters, each colony preserving complete freedom and full right to decide on all local or municipal matters. One of the first acts of the general assembly should be the appointment of commissioners to revise the laws of all the colonies, and to condense them into a general code for the government of the entire dependency; each colony, however, retaining full power and authority for local administration, particularly as regards finance and taxation, police regulations, &c. This confederation would absolutely require the appointment of a governor-general, with a responsible council. There should be instituted a high court of justice, which would always constitute a court of appeal: this tribunal to be supported by a common fund, to be furnished by the colonies jointly, according to their respective population. Lastly, there ought to be immediately provided a central lunatic asylum, and a penitentiary for juvenile offenders.

These are my views on the constitutional changes which might be made in these colonies; and I am convinced, that by the adoption of some such plan, not only would a regeneration be effected in the general system of government, but an improvement also in their local administration. The most essential laws being framed by an assembly, composed of members chosen from among the ablest men in each colony, would undoubtedly be better organised and more closely adapted to the circumstances of all; nor, as at present, would legislation be hurried through, and a new ordinance required for each contingency. The office and duties of the local legislators being circumscribed within narrower and more practical limits, they could devote more attention to the internal administration of each colony, and but little ground would be left vacant for party discussions. A more extended field being also open to men of talent, they would the more likely aspire to becoming members of the general assembly; and complaints which, preferred by the inhabitants of Tobago, Trinidad, or Nevis, &c., at present are disregarded, would probably receive some share of attention when urged by a colonial parliament.

It would be impossible here to enter into detail regarding the measures which might, or ought to be, adopted by the colonies themselves; I must therefore restrict my observations to the notice of a few matters which might profitably occupy their attention, there being two points, however, upon which I am more particularly desirous of insisting, viz., the holding out of encouragement to agriculture, and incentives to immigration.

I really believe that the English laws of marriage and testament are not the best adapted to these colonies, particularly when the position of our population is seriously taken into consideration.

As regards the law of marriage, I candidly confess my partiality to the principles of the French law on the subject, as being much better suited to our circumstances. Concubinage was the normal state of the mass of the population during the time of slavery, and, as a consequence, many children born during that period are illegitimate, and, of course, have no claim on the heritage of their fathers, who may die intestate; and many must die intestate, from mere ignorance of the law: these children being thereby deprived of all inheritance, and made to bear the consequences of acts for which they, in justice, cannot be held responsible. Either, then, allow the parents to legitimise their issue by after-marriage, or allow a certain proportion of the father's property to the offspring of illegitimate unions.

I have already stated that adultery is more frequent here among the lower orders than in any other class in other countries; but by the law of testament, a father or mother can bequeath the whole of his or her property to any individual, without assigning any reason. What may be the consequence in many instances? That the innocent issue of a lawful union will be made a victim to the sin of his parents—the adulterine offspring, or culpable parent, quietly inheriting the property which surely ought to belong to the legitimate child. I cannot but regard a law which indirectly sanctions such transactions as highly immoral; for, is not adultery condemned by the religious, as well as the civil code, of nearly all countries? And are not the damages granted by the English law for criminal conversation to be considered as the retributive penalty of adultery? The injured party, it is true, recovers damages for the blemished honour of his house and name; but neither do the legitimate children nor society receive protection or compensation from the award. I am aware very feasible reasons on this point are given in favour of the English law, and they are certainly very creditable to the British nation; but they are not applicable to our population, nor will they be so for an indefinite period.

A liberal system of public education, based on sound principles, is, I believe, the most powerful instrument for good which any government can use; I therefore would insist that primary education should be afforded to all. I have heard many persons object to this plan, on the ground that education tends to create, in the lower classes, a desire to withdraw from agricultural labours, and an aspiration to occupations above their condition. This objection, I confess, is plausible enough, but it will retain its plausibility so long only as the larger mass of the people remain in their present state of ignorance. The knowledge of reading, writing, and arithmetic, confers a privilege only in those countries where there exists an unqualified mental darkness. On the other hand, it cannot be denied that even the lowest primary instruction is the first step to religious and industrial teaching,

that this instruction is the more essential in those countries where it is absolutely necessary to impart to the people both religious and social ideas and habits; but I, at the same time, contend that man has, besides the brain in his head, a heart in his breast, besides an intellect to develop, morals to improve. To this end education must be both religious and secular, and the state, to be impartial, must leave the former entirely to the clergy, though not without aiding, whenever practicable, in the combination of both. Several plans might be followed in the promotion of educational views, either by allowing a certain sum to each congregation for the purpose, the Government retaining, however, full control as regards the plan of *secular* instruction, and a complete *surveillance* over the routine and working of the schools; or by appointing a certain day and hour at which the pupils belonging to each communion might attend the religious instructions of their respective ministers. Whatever scheme, however, may be adopted, I have come to the conclusion—and that not without experience founded on diligent observation—that a purely secular education must necessarily conduce to complete indifference in matters of religion, and, subsequently, to infidelity.

Various projects may also be devised for the encouragement of agriculture; but, as a general rule, let all financial enactments, be they in the shape of direct or indirect taxation, bear as lightly as possible on landed property; admit agricultural implements of every description, as also draught animals or those of burden, duty free; afford effective protection to the growth of staple and other marketable productions, by attaching a heavy penalty to the stealing or destruction of agricultural products; and guarantee the safety of sugar estates, especially, by making the penalty for incendiarism as severe as possible—say, transportation for twenty years. Aid in the diffusion of agricultural knowledge by establishing model-farms, and teaching thereon the science of agriculture practically; for, let it be remembered, that though our population is purely agricultural, yet the labouring class, in their ignorance, are prejudiced against such occupations; that, with the exception of a minority of the planters, no others possess even the most elementary notions of agricultural economy; and that the emancipated class, having been coerced for years into the tillage of the soil, not only never learned, but, under the circumstances, never could have acquired the simplest notions of a sound agricultural practice. I consider that no capital could be better invested than in the promotion of such model farms; they could be made self-supporting, and, under favourable circumstances, they might yield an adequate net revenue for the establishment of a sinking fund.* In the management of these farms, not only should im-

* See Appendix.

proved processes of cultivation and manufacture be adopted, but new cultures might also be introduced. No one can pretend, that everything has already been determined and exhausted in these islands. Not only the production of arrow-root, tulema, starch, tobacco, and rice, might be encouraged and improved; but a knowledge of the rearing of live-stock is still in its infancy. The cochineal might also be reared, as well as the silk-worm; particularly the species lately imported from the East Indies, and which feed upon the leaves of the castor-oil plant. The cultivation of vanilla and spices might be tried on a large scale, as also the preparation of the plantain-fibre. It seems that part of the £20,000,000 sterling, voted by the Parliament as a compensation grant, still remains unappropriated; to what better or more beneficial end could it be applied than the formation of a model farm or estate in each colony? Really, one cannot avoid feeling grieved when—taking into consideration the great, the almost unlimited resources of these islands—one reflects on the amount of misery which now prevails, and which must continue on the increase, if some step be not adopted to rescue them from the present state of embarrassment and distress. A bountiful Providence has lavished its choicest blessings on these countries, but man has spoiled, and all but ruined, as fair a field as ever nature laid open to industry and enterprise.

Besides these measures for the direct encouragement of agriculture, others might be adopted which would exert an indirect influence on the agricultural interests of these possessions. I take it for granted, that laws which are found highly advantageous to a chiefly manufacturing or commercial nation may not be the most suitable for purely agricultural communities; and Great Britain may be said to be mainly a manufacturing and commercial country, whereas these islands are purely agricultural. In Great Britain, and very wisely too, the laws have been framed with the view of fostering the interests of manufacture and commerce, and, unfortunately, the same principles may be said to have been adopted with regard to these colonies. These principles, I contend, should be restricted in their application. From causes already stated, the emancipated classes have a strong inclination to retire from rural, and especially sugar labour, and to congregate in towns and villages, where they engage in petty trade, or adopt some handicraft. The number of shopkeepers, tailors, carpenters, &c., is consequently out of all proportion, compared with the requirements of the country, and almost every small tenement in town or village is occupied by some retailer of fruit, charcoal, &c.; in addition to the tribe of hucksters who perambulate the streets of the towns and the high roads of the rural districts. If this could be regarded as a sign of prosperity there would be ample cause to rejoice; but quite the reverse. These shopkeepers,

tradesmen, and vendors, may be said to have absconded from the agricultural occupations, and, as a consequence, are, in general, wanting in those qualifications which are necessary to success in their new avocations. As to the fruiterers and other petty dealers of the like *genus*, the stock-in-trade (!) displayed in their trays, before their doors, or on stands as apologies for counters, is really ridiculous, for I have no doubt, were an inventory of articles taken, in nine cases out of ten the value of property would not amount to ten shillings. Some fruit, a few pounds of charcoal, peas, plantains, &c., constitute, generally, the whole stock; and, in a large majority of cases, the vendor barely manages to eke out a most precarious livelihood. I really think that any measure which would tend to diminish the number of shopkeepers, hucksters, and these peddling vendors, would be to the advantage of all; and, with this view, I suggest the adoption of the following:—A law of apprenticeship for tradesmen, and a licence-tax for all traders and traffickers. The law of apprenticeship I regard as absolutely necessary, and it ought, therefore, to be stringent. Such law, as far as I know, exists in all, or nearly all, the countries of Europe. I am aware that a license-tax is quite at variance with British notions of trade and individual freedom, but I reiterate my former assertion—those laws which are best adapted to a country like Britain may not be applicable to our communities, and such a law is, in principle, just and equitable. Every individual ought to pay for the protection afforded by civil institutions: all contribute to the indirect taxes, thus contributing to uphold the protection afforded to the person of the subject; those who are owners of property are, generally, made to pay direct taxes for the security extended to property, or for any other advantage they may derive from the public institutions of the country. Why not make traders pay a direct tax for the protection granted to *their* property? A license-tax, therefore, is just, and the principle is partially carried into effect by the licensing of hucksters, carters, boatmen, &c. Such a tax, moreover, in our colonies, would be most opportune, for it would have the effect of diminishing that enormous number of would-be shopkeepers and irregular dealers of all kinds and grades, who frequently *wind up* after a few months by being indebted to the merchants who have supplied them, or to the poor cultivator whom they have gulled. The public would not suffer from the adoption of such a measure; on the contrary, the competition now existing must be a ruinous one to the *bonâ fide* grocer and provision retailer, who otherwise might be better stocked, and could more extensively and cheaply meet the demands of customers, were he protected against the idle and dishonest swarm which generally form the bulk of under-sellers in these colonies. The tax might be a per centage on the rent paid for the shop, or, what would be preferable, a scale of proportionate rates might be

calculated, and the tax graduated according to the nature, importance, and extent of the trade carried on. Or, again, it could be made a specific tax, and the amount based upon the supposed capital of a shop, such as it might be. It would then follow, that those whose capital was inadequate to a sufficient establishment, would direct their industry to other channels. In fact, the taxes on real property are heavy and rigidly exacted, whilst many other sources of legitimate taxation remain untouched.

I have now come to a most important and vital question, that of immigration. Excepting two or three islands, which have a large population, and therefore may rely upon a steady supply of labour, the outcry for an increase of *hands* has been loud and general from the emancipated colonies; and the only ones that have not succumbed are those which have been able, in some measure, to provide for immigration, viz., the Mauritius, Demerara, and the island of Trinidad. This is a fact which, I am satisfied, amply answers the statements of those who attempt an argument to the contrary; and as it would therefore be a work of supererogation to insist upon the necessity of immigration, I shall confine my observations to the various modes in which a steady influx of population might be secured to these colonies.

The class of people we mainly require are agricultural labourers; skilful mechanics we shall always be able to procure, whenever we stand in need of their services. European labourers might find employment in the boiling-house, or might be employed on cacao plantations, in the care of stock, or the cultivation of vegetables, but they will never be able to undergo *any hard* or *exposed* labour, more especially field work, in our climate. The only class which will ever suit our requirements are Africans or Asiatics. I must here declare, once and ever, that I am decidedly opposed to the immigration of Africans direct from Africa—at least in any number—because the natives of that continent, ranking no higher than semi-barbarians, require a great deal of care and attention to effect their civilisation, particularly as, from past events, they have every reason to distrust the *Buckras* or white men. But nearly at our doors there exists a race of African descent, laborious, intelligent, and civilised. I mean the free people of colour of the United States. These are comparatively civilised, the gross darkness of barbarism and heathenism having been neutralised by the light of Christian doctrine through several generations; and no doubt can be felt that, in a congenial climate, under the operation of free institutions and the impulse of European activity and industry, they would ultimately constitute an industrious, peaceful, and happy community. From my personal knowledge they are not deficient in the spirit of enterprise and industry, and, from their power of endurance, are the very class we require to promote a *go-a-head* movement in our own people. More intelligent and

civilised than the African, more hardy and hard-working than the Asiatic, less prejudiced and enervated than the Creole, the settlement of such of the West India islands as are in need of population by the coloured people of the States, is an enterprise worthy the serious consideration and strenuous efforts of the statesman and the philanthropist, of the great Republican Union itself, and of those nations which have the lead in Europe, particularly of England and France.

The state of degradation in which the African race is kept in North America must make them anxious for a better home, for not only do they not enjoy political privileges, but they are everywhere kept in a position of servile inferiority, even in the everyday concerns of life, in railway carriages, at theatres, on board of steamers, and, harsher than all, in the temples of a common FATHER. This is the condition of the coloured people, not only in what are called the *slave states*, as Louisiana, Alabama, the Carolinas, or Virginia, but also in Massachusetts, Indiana, Ohio, &c. Is there to be found a class of society so much degraded in any part of the world, except perhaps the Parias and the Poohlias in Hindostan? Could these people hesitate for a moment to grasp at immigration, were sufficient inducement offered them, to encourage their settlement in those free and beautiful islands? And would the government of the States have any objection to the emigration of that class? On the contrary, they seem anxious to eject that foreign element from their national composition; laws have already been passed in some of the free states prohibitive of their settlement there. It is therefore natural, that the United States government should readily concur in any plan which would tend to relieve them of the coloured population; for this population, whether slave or free, is viewed with a jealous eye by the whites, and they are fully alive to the inconveniences, not to say the dangers, arising from the presence, on the same territory, of two races so broadly antagonistic. Listen to what Lieutenant Maury says on the subject:—"The valley of the Amazon, with its magnificent and interesting future, presents itself to the American mind in another point of view.

"That view we hastily sketch, presenting only the main feature of it.

"If ever the vegetation there be subdued and brought under, if ever the soil be reclaimed from the forest, the reptile, and the wild beast, and subjected to the plough and hoe, it must be done by the African with the American axe in his hand; and he alone is equal to the task which man has to accomplish in the valley of the Amazon.

"At the north the spirit of emancipation has been pressing the black man down to the south. He is now almost confined to the waters of the gulf. In the south the same spirit has pressed

him up to the north, and assigned to him the valley of the Amazon as his last resting-place upon this continent.

"Therefore, humanly speaking, and humanly perceiving, the settlement of the Amazon, its relation to this country, its bearing upon our future commerce and institutions appear to be so close, so intimate, and withal so potential, that the destiny of the United States seems to be clearly connected with, wrapped up in, and concealed by, this question.

"The institution of slavery, as it now exists in this country, fills the mind of the State man with anxious solicitude. What is to become of it? If abolished, how are so many people to be got rid of? If retained, how are they to be controlled? In short, when they have increased and multiplied according to the capacity of the States to hold them, what is to be done with them, whether they be bond or free?"

". . . . . Unless some means be devised of getting rid of the negro increase, the time must come—and sooner or late it will come—when there will be an excess, in these States, of black people. This excess will be brought about by the operation of two causes—natural increase of the blacks on the one hand, and emigration of the whites on the other. As their numbers spread, and as their labour becomes less and less valuable—as in process of time it seems likely to do—owners will sell or leave their negroes behind, and emigrate to other parts, thus, by their absence, increasing the proportion of blacks to whites.

"The New England States and the Middle States did not emancipate their slaves; they banished them. They passed their post-natal and prospective laws of emancipation, it is true, but they did not command the master to let the slave go free. Before the time came round to let the slave go free, he had, in most cases, been taken off to the South, and sold there; so that the so-called emancipation of the North was simply a transfer to the South of the slaves of the North; an act of banishment—nothing more.

"The South could not, if she would, banish her slaves, and then tell the world that that was emancipation; for she has no place of banishment to send them to.

"In the spirit of truth and candour, we do not think we venture too far when we assert it as a probability, that neither New England nor the Middle States would have passed when they did the Emancipation Acts, which sent their slaves into banishment, if they had not had the South or some other place to send them off to.

"Now, suppose that Maryland and Virgina, Kentucky, Tennessee, and Missouri, should wish to pass post-natal free laws, or a law of the so-called emancipation, can it be imagined that the remaining slave states would permit the slaves from those states to be crowded down upon them, to be brought there and sold,

as those of the New England States were, when they were emancipated?

"We know the free states would not permit the liberated slaves to come over in any considerable numbers into their borders. The new constitution of Indiana, so far as she is concerned, is conclusive upon that point.

"It is not to be supposed that the states in question will ever emancipate, if the liberated slaves are to stay where they are. Emancipation and citizenship, both to the slaves of the Southern States, is rather too much to expect from any one of them.

"The slave population increases at the rate of two and a half per cent. per annum. Therefore, unless an outlet be found for the slave population as slaves, the difficulties of emancipation in those United States, so far from decreasing with time, will become greater and greater; and that, too, they are doing at a tremendous rate, and with a frightful ratio, as year after year rolls round.

"The fact must be obvious to the far-reaching minds of our statesmen, that unless some means of relief be devised, some channel afforded, by which the South can, when the time comes, get rid of the excess of her slave population, she will be ultimately found, with regard to this institution, in the predicament of the man with the wolf by the ears—too dangerous to hold on any longer, and equally dangerous to let go.

"To our mind, the event is as certain to happen as any event is which depends on the contingencies of the future, viz., that unless means be devised for gradually relieving the slave states from the undue pressure of this class upon them, unless some way be opened by which they may be rid of their surplus black population, the time will come—it may be not in the next, nor in the succeeding generation—but, sooner or later, come it will, and come it must, when the two races will join in the death-struggle for the mastery."

I confess I could not resist the desire of transcribing these lines into this introduction, because they show what is, on the question of negro slavery, the opinion of a man who has already gained a name in the scientific world, and is, besides, a *Southerner*. It is plain that the greatest obstacle to emancipation in the States is the difficulty of getting rid of the negro population. Let us open a channel through which part of that population may flow off, and then we shall have done both a good and a wise act.

True, Lieutenant Maury and the slaveholders seek a place of banishment for the slaves of the South—*as slaves*—and they think they have found that place in the valley of the Amazon. But the gradual transfer of the slave population of the South to that "magnificent and interesting" valley, is evidently a herculean

task, and must inevitably require many and almost insuperable obstacles to be surmounted. I say nothing of those objections which may be urged by Brazil itself, with its already preponderating slave or negro population; by England, by France, by Venezuela, and Peru. But the difficulties arising from the insalubrity of climate, the remoteness of place, the difference of language, religion, and institutions, together with the prejudices of the colonising parties themselves, seem to me so very great as to be nearly insurmountable. Let the people of the States, and particularly the abolitionists, concur in opening a road to emigrants from their land to these West India colonies; let them widen this highway by degrees, and all parties will benefit by the success of a really good and great enterprise—these islands by the influx of population, the North by an increase of exports. The emancipation of the slaves will go on increasing yearly, by manumission, purchase, or post-natal laws; it will also proceed from North to South, as the slave labour becomes less and less valuable. The colonies would receive emigrants first from Maryland, Virginia, Missouri, Kentucky; then, as time rolls on, from Tennessee, the Carolinas, Georgia, Alabama; whilst we ourselves have sufficient untenanted area to accommodate 2,000,000 settlers at the rate of 200 inhabitants to the square mile.

Can the British Government or the colonies have any objection to the immigration of the coloured population of the United States? On such a step the British Government cannot put any reasonable veto, inasmuch as this is not a measure of relief which will cost the treasury a farthing, or which can make sugar or other colonial exports dearer; on the contrary, the most opposite results may be anticipated. Sugar surely is cheap enough at the present period; nor can the price be reduced without endangering the capital now vested in its cultivation. But tobacco, coffee, indigo, starch, oils, fibres, &c., might then also be produced in great abundance by a more numerous and industrious population; and not only will the quantity of actual staples be augmented, but new growths will be introduced: and, in return, the importation of manufactured goods would increase in the same, or even in a greater ratio, thus affording fresh aliment to British commerce and shipping. It is evidently, therefore, the interest of the British people and Government that population in these colonies should be largely multiplied.

Next, can the inhabitants of these islands offer any objection to the immigration of the coloured people from the States? If any, it can only be urged by individuals either of European or of African descent. As this immigration would tend directly or indirectly to increase the quantity of available labour, the proprietors of estates would benefit by, instead of suffering from it: but it may be objected that it would add formidable strength to

the African element. To this I answer—first, that, instead of objecting to the influx of civilised Africans from the States, I would welcome it, I would hail it with those feelings which become a Christian and a philanthropist; I would accept it as the best guarantee of order and progress, inasmuch as the coloured population of the United States, and particularly of those parts whence they would first emigrate, are religious, industrious, progressive, and orderly; secondly, the accession of an industrial class would greatly tend to raise the value of property to some regular standard; and its holders, if willing to sell, might then dispose of their possessions at a remunerative price: as to those who are engaged in trade, they would clearly be the earliest sharers in the benefits of such a movement.

Lastly, can the negro population itself object to that immigration? The question may appear idle, but I know that, in some, an antipathy does exist on this subject: an objection, however, from such a quarter is evidently most unreasonable, because not disinterested. I say that emigration from the States would bring to our shores a race congenial in origin, language, and religion; individuals, generally laborious and energetic, who would probably supplant the present occupiers of the land. Is this the objection? The sooner it is disposed of the better. But, besides the question of pounds, shillings, and pence—of so paramount importance in our golden age, or rather, *age of gold*—another item of greater magnitude, and of more absorbing interest, is involved in, and intimately connected with, this matter. I allude to its moral phasis. Whatever opinions may be entertained on the subject of slavery, there is, I believe, a perfect unanimity in denouncing it as a degrading institution, which stifles all inducement to improvement, and shackles the slave within mere instinctive bonds; whilst the slaveholder, accustomed to the exercise of unlimited and uncontrolled authority, will not exert that authority in curbing his passions or exerting his intellectual powers to the same extent as the man who has to deal with free agents. Here, therefore, is an opportunity offered of snatching from degradation many of our fellow-creatures; here is an opportunity for affording to the poor abused race of colour a home where they can improve their moral, intellectual, and physical condition. Be it from local and accidental causes, or from some inherent defects in the African temperament, it cannot be said that the great experiment of emancipation has succeeded. And yet, it must succeed, or be condemned as a political blunder; for human nature is much more logical than individuals, and the consequence of such a failure would be a disposition to resist any future attempts at negro emancipation in countries where slavery still exists. And, as a comment on this deduction, let it be borne in mind that there are, at the present moment, in America alone, about

7,000,000 of African-descended slaves. Past experience, however, has proved that negro emancipation *has* failed, whenever abandoned to its own working, and unaided by the interference of the white man.

The fate of the white and the black man is intimately connected, and in these colonies—where slavery no longer exists—they must rise or fall together. Highly mistaken are those who think that the emancipated Africans are able to carve out their onward destinies by their own unaided efforts, and that the presence of the white man on the same spot with them is an obstacle to their own advancement. Even were the African far superior to the European, he could never progress, if once left to his own lax energies; it would be to him an utter impossibility, simply because, possessing but the *vis inertiæ*, he absolutely requires an external impetus.

The Greeks—one of the most intellectual branches of the Caucasian race—have been liberated from Turkish bondage for the last twenty years; they are everywhere pressed on by civilisation, and encouraged by the recollection of past glory; and yet they are advancing but tardily in the march of improvement.

The States are not, however, the only source from whence we may obtain a supply of labour. The vast and overcrowded peninsula of India teems with an intelligent, mild, and industrious population; but that population is crushed under the tyranny of *castes*, and is, in its native condition, most miserable. The Hindoo race is a branch of the great Caucasian stock; and the coolies, who have been brought to the Mauritius, Trinidad, and Demerara, have been instrumental in saving those valuable possessions from ruin: they have proved a steady, intelligent, and industrious class; and, so far as my personal opinion is concerned, I would say they are preferable to all other immigrants—inasmuch as they have little to learn, and nothing to forget or forgive. It is, however, impossible that the system adopted with regard to Indian immigration should be persevered in: we cannot any longer afford to send back the immigrant to his country after five, or even seven years of industrial residence. Once transferred to this Archipelago, he must either remain therein, or take his return passage at his own expense: let him understand this clearly before embarking from his native shores. Why that condition was imposed upon us I am at a loss to understand. Is it because the coolie is better off in his own country? No—reliable reports speak to the contrary. Is it that his labour is more profitable there than it can be rendered here? But here a coolie produces, in the shape of sugar, much more than he can produce in India. And are there not millions of people in his own country who are kept under such servile and galling degradation, through the prejudices of *caste*, as absolutely

to constitute them the most miserable race of beings under the sun? Encourage, by all means, the immigration of these poor creatures to a land of freedom and Christianity. Evidently the British Government cannot demur to the emigration of these people; for, allowing that even 2,000,000 should leave Hindostan for our shores, can it be said that the country would suffer thereby? Certainly not. And, on the other hand, hundreds of thousands who periodically perish through the joint agencies of hardship and famine, would thus be saved.

The only difficulty in the way of Indian immigration is our remoteness from Hindostan, and the consequent expenses attending the conveyance of emigrants. Mauritius, which is much nearer to the peninsula, has already received an accession of 110,000 coolies—to the advantage of the emigrants themselves, to the benefit of the colony, and, I dare say, to that of the commerce of Great Britain likewise.

Several plans might be suggested for obtaining labour in these islands. A general fund might be appropriated by each colony, or capitalists and companies might undertake their introduction, under certain conditional arrangements.

Immigration carried on wholly at the public cost, I consider as unwise, and, to a certain extent, hazardous to the finances of the colonies; but a special fund might be provided, by making those who require labourers, and also the immigrants themselves, contribute to its raising. The safest plan, however, would be—in this as in other matters—to encourage private enterprise, by affording governmental security to those who might wish to engage in the undertaking.

"I have been led to doubt," says Lord Harris, "whether it be possible that immigration can be advantageously carried on as a public enterprise, at the general expense.

"But if private individuals are permitted to provide immigrants for themselves, at their own risk and expense, there is a certainty that the attempt will be made only by some men of capital, who possess the means of supporting and paying them—whose interest it will be to take the very best care of them, and whose employment of numbers of labourers is likely to prove of benefit to the community generally."

The following scheme has been suggested:—subscription lists could be opened in the different colonies, on which the planters and others would inscribe their names for the number of labourers they respectively require; the mere fact of signature to be a pledge that the passage-money would be paid by the party applying for immigrants. Individuals or companies would then contract to import the labourers at so much per head; these should be engaged by the subscribers from the vessel, immediately on her arrival, for a number of years corresponding to the amount

paid for their passage. Every person engaging an immigrant should pay his passage-money in full, or by yearly instalments, within a certain period—at an interest of 6 or 8 per cent., and with a preferential security on the property. The Government should, on the other hand, guarantee the services of the labourers to those engaging them; it might go further still, and act as security for the payment of any passage-money advanced by the contractors. On the other hand, it would be the interest, as well as the duty of the planter, to conciliate and preserve the labourer for whose services he had advanced money; and the freedom and interests of the immigrant could be effectually protected by laws passed to that effect; every emigrant, for instance, could be rendered perfectly independent on paying to his employer the money advanced for his passage. I think that by the adoption of this or any other like plan, the interests of all would be protected, and the welfare of these colonies promoted.

Connected with this vital subject of immigration, are several subsidiaries of essential importance. The introduction of labourers ought to be gradual and restricted within certain limits, both on account of the necessity of acclimatization, and the risk of an insufficient supply of food; it should, therefore, be made imperative on the contractors—in order to prevent a scarcity, and consequent rise in the price of food—to import, together with the immigrants, a certain quantity of alimentary articles suited to their habits of diet, and which they could easily and certainly dispose of at a moderate profit. The cultivation of "ground-provisions" ought also to be encouraged, and a certain extent of public lands—proportionate to the number of emigrants introduced—should be offered every year to public competition, the revenue from the sales to be applied to the making of roads and the maintenance of public schools; otherwise, to revert to the purposes of immigration.

Unaided immigration should also be encouraged by a judicious law of naturalization, and the sale of crown-lands. This would introduce skill and capital, continuous and cheap labour, with cheap food—all tending, as they must, to increase the value of property, by augmenting the revenue therefrom; so that capitalists would no longer hesitate to come forward and make investments at a reasonable rate. But the old system of advances on produce must be abandoned; for not only is it certain ruin to the planter, but also very hazardous to the party advancing. From 8 to 12 per cent. is, I believe, a very fair return; but from 20 to 30 per cent. is robbery under a different and more specious term—that of *accommodation.*

Capital, however, requires more security still; I mean surety against internal revolutions, and external invasions. But, in this respect, the Home Government seems to have come to the deter-

mination of throwing these possessions on their own resources—in fact, of abandoning them; and not only have the troops been withdrawn from the smaller islands, but all articles belonging to the commissariat and ordnance departments have been sold off, and barracks and fortifications given up to the Colonial Governments. It is said, however, that some vessel or vessels of war will occasionally appear in the offing; and, in case of necessity—that is to say, after the evil may have been done—will offer the protection of crew and cannon. This is, to all intents and purposes, the perfection of the system of "*laissez-faire*" and "*laissez-aller.*" But the expedition to the Crimea has already shown what may be the result of that system of negligence and non-intervention; and yet England and the United States are, perhaps, the only countries where such a system could have withstood failure; and the reason is, that the people in those states are accustomed to self-government, and least of any other nations require the direct interference of executive authority in the order and management of public affairs. But, as regards these colonies, it is still more incongruous than in Great Britain, for this reason—that *here*, public opinion is disregarded and slighted, and cannot exercise any check—it is the *laissez-aller* system, as far as the interests of the colonists are concerned, and the *laissez-faire*, as regards the public employés. Now, what to us will be the result of such a policy? And what are the prospects of these islands under the system adopted and persevered in for the last *seventeen*, but more particularly for the last *ten* years? These are questions to which no answer can be given under present circumstances—especially as "storms may come at sea, and crises on the land"—whilst our prospects are very greatly, if not wholly, dependent on the contingencies of the future. I do not, however, abandon the hope, the rational hope, that there are some elements of prosperity stored up in the womb of the future for these islands of the West; and, in the following considerations, I shall not treat of their interests as dissimilar and divided—far less as antagonistic—but follow the course prescribed by nature herself, who—regardless of their future allotment to various powers—has, once and for ever, linked them together as so many members of one common family.

The prospects of any country depend, mainly, on its internal resources, its geographical position, and means of communication, and, finally, upon the character of its inhabitants. The West India islands being, generally, small in size, their inland communication is neither distant nor extensive; but, as they are rugged, and in many places mountainous, even that intercourse is often difficult. I have already mentioned their capabilities as agricultural countries, and given a sufficient estimate of the character of their inhabitants. I shall only add, that by the natural agency of social intercourse and commercial communication, the character

of the population would rapidly improve, and a spirit of industry be created; I even consider the result as the necessary consequence of the onward march of events.

Several of the West India islands may be regarded, both from their size and configuration, as unimportant: such, for instance, are all the islands of the Bahama and Virgin groups, Montserrat, Tobago, &c. Others, on the contrary, are, either from their size, position, or fertility of soil, of an importance which cannot be undervalued; and a few of them, though at present disregarded and neglected, must, by force of circumstances, and in the mere progress of time, rise from their present depressed condition to comparative wealth and prosperity. This may easily be predicted of Cuba, Hayti, Porto Rico, Jamaica, and Trinidad.

Cuba never will, never can, become *Africanized*, as the Americans would say, whether it continue a dependency of the crown of Spain, become independent, or be annexed to the States, for the following reasons:—1st, Cuba is one of the principal marts of the world; 2ndly, From its geographical position and proximity to the States, it must afford them guarantees, or become, at any cost, an integral part of the republic ere it can be *Africanized*. Supposing even a servile war to break out in Cuba, and that the "Queen of the Antilles" should be dragged through all the horrors of a concussion of races, the white race must ultimately triumph; for Cuba would, to a certainty, receive from the neighbouring continent such effective aid and support as must decide the struggle in her favour. The United States, I repeat, will not permit the *Africanization* of Cuba, since it would be an abdication of their own influence in these seas.

Less important than Cuba, Porto Rico is not exposed to the same dangers, especially as the slave population and the African race do not form the majority of its inhabitants, nor even of the labouring class, more than two-thirds of the field-labourers being freemen.

The island of Hayti is divided into two independent states, viz., the negro empire of Hayti, under Soulouque, to the west, and the mixed republic of San Domingo to the east; the latter had been annexed to the former, by treachery, under President Boyer. After the exile of Boyer, the Dominicans, though numerically one against five, regained their independence under Sautana, after a short but bloody struggle, and they have since maintained their independence against both the troops and the intrigues of the Haytian Emperor. The policy of the San Domingan Government is liberal, instead of being tyrannical and exclusive like that of its neighbour, the Haytian empire. Emigrants are invited to the Dominican territory from every part of the world, life and property are safe, and, as a consequence, agriculture and commerce flourish;

religion is also encouraged, and Christianity is, above all, the great civiliser. The elements of civilization are therefore more numerous, more active, and more vigorous in the Dominican than in the Haytian people; and of course the position of the former as a nation must improve, whilst the latter must as certainly remain stationary within the walls of exclusion which they have thrown up around themselves. The Haytians will ultimately be constrained to follow the good example of their neighbours, or sink into the insignificance which must naturally result from their narrow-minded policy. The island of Hayti is second, in extent and fertility, to Cuba only, and must attract European commerce and enterprize, when the guarantee of security shall be thereunto attached.

Jamaica is, at the present moment, in a most precarious and lamentable condition. The causes which have brought on the present deplorable condition of that beautiful and important island are various and complex. But the principal cause is, no doubt, the indifference manifested by the Home Government towards British possessions in these seas. And yet Jamaica is on the route from Europe to the Pacific, to China, Japan, and the isles of the East, through the centre of the American continent, whether by the way of the Isthmus of Panama, the Lake of Nicaragua, or even the Isthmus of Tehuantepec. Kingston has already become a station for steamers from New York to Navy Bay, the terminus of the Panama Railway in the Caribbean Sea; and is it not, from its situation and the excellence of its port, the natural station for vessels coming from or going to the river San Juan? The British nation, therefore, must either take a redeeming interest in the "Island of Springs," or, by continuing to neglect its natural resources, allow it to transfer all its advantages to some other nation more provident and enterprizing than itself.

Trinidad is second, in *positional importance*, to Cuba alone: from its situation, it commands the extensive valley of the Orinoco, of which immense and teeming river-basin the Gulf of Paria is the natural outlet. Irrespective of this, its own soil is richly fertile, and nearly the whole extent of the island is still covered with virgin forests.

Of the smaller islands I say nothing, because, though each has its own *status*, and may exercise a certain limited share of influence, they must all follow the general fate of the larger; they may, therefore, be considered as mere satellites moving in their own orbits, yet within the sphere of attraction of greater planets.

Ere the lapse of fifty years, the great commercial thoroughfare from Europe and the shores of the Atlantic to the regions bathed by the Pacific, from Chili to Oregon, and from New Zealand up to Japan, an immense extent of rich and populous countries, will be through Central America. The Western Archi-

pelago has been placed by nature on this national highway as a vast caravanserai for the reception of travellers, traders, and merchandise; and this is particularly the case with the islands of Jamaica, Cuba, and Hayti. Now, are we to believe that these islands will be allowed to retrograde into barbarism, and to become so many *buccaneering* or pirate haunts, in which to enact the scenes of bygone days, or so many *cours des miracles* from which swarms of vagabond beggars will crawl forth and obstruct the way? This I do not, I cannot, believe. These islands must, of necessity, become more and more civilized, either from the direct or indirect intervention of the great commercial nations of the world. The great obstacle of slavery has already been removed from many; the foundation has been laid; it now remains to raise the superstructure. I am only surprised that so little attention is paid to the subject by European statesmen whilst those of the great republic of the North are keenly aroused to a sense of its importance. Why are the latter so exceedingly anxious about the possession of Cuba? Why have they been negotiating with the Dominicans for the cession of the port of Samana? Because they know well that once in possession of the "Queen of the Antilles" they change the Gulf of Mexico into an American lake, the only free outlet being the canal of Yucatan, which they would command by means of Havana, and the *Ensenada de Cortez.* And by obtaining the cession of Samana they evidently expect to pave a way for the annexation of the Dominican republic first, and the ultimate submission of Soulouque: meantime, they are at once placing Cuba between two imminences, viz., from the N.E. and the S.E. It is, nevertheless, to be expected, that in case they cannot make themselves masters of Cuba, or by negotiation obtain a footing in the island of Hayti, they will soon find a pretext for a rupture either with Soulouque or the Dominicans, and then Samana, or the still more important station of *Mole St. Nicolas*, at the N.W. extremity of Hayti, just opposite Santiago de Cuba, and commanding the outward passage, will become their prize. What could the busy statesmen of England and France object to such proceedings? Let them rouse themselves, therefore, and make some attempts at relieving these colonies, and thereby creating some counterpoise to the usurping propensities of the Americans, or at once declare their willingness and readiness to yield to their preponderancy.

From the preceding statements it does not appear unreasonable to expect that, within a given time, the Western Archipelago will recover the high position which it once occupied, and which by nature it must eventually occupy. It only requires population —and ere long a tide of population will set in from the United States, as also from Asia, and these people will become the resettlers of the now comparatively insignificant West India islands:

then these islands—which, under no circumstances, can ever become manufacturing communities, but must for ever retain their agricultural bias—will supply the manufactories of colder climates with raw materials and tropical products, receiving from them, in return, their supply of manufactured goods.

Cuba and Porto Rico will remain, probably for a long time, what they now are, dependencies of the crown of Spain; because it is the interest of all, excepting the Americans, that they should so remain. Cuba, particularly, must belong to a third-rate power; it cannot belong to either the United States, England, or France; and the two latter powers have no interest in its becoming independent, since it would soon become annexed to the former. Hayti will undoubtedly work out its admirable resources, in its present political condition, under the giant influences of the Americans and Europeans. Jamaica and the smaller Antilles afford promising homes to the *tabooed* coloured population of the States,—a population approvedly industrious, and to some extent imbued with the *go-a-head* principle. Trinidad and Demerara—where the African race is not, as yet, very numerous, considering their great extent—would be a fair field for Asiatic emigrants, who have already succeeded very well, though hitherto introduced but in small numbers. They have proved steady labourers, and particularly well adapted to agricultural occupations. They are also intelligent, industrious, and saving; in fact, precisely the class of people to accumulate specie in the country. Let them become converted to Christianity, and I have no doubt that, in our climate, they will prove equal, if not superior, to the Europeans.

The European or white element being at present predominant in Porto Rico, and nearly so in Cuba, these two Spanish colonies will take the lead in the transformation which is now preparing. To these two islands, emigrants from the southern parts of Europe and from the Canaries will resort. "We advise," says Ramon de la Sagra, "the inhabitants of Cuba to increase, by all possible means, the industrious white population; for such may be, some day to come, the commercial and political preponderance of the most important of the Antilles—lying at the entrance of the Gulf of Mexico—that it will change the future destinies of the other islands, by exercising over all a favourable reaction by the combined influence of a well cultivated soil, and the superiority of intelligence of its population of European origin." Such is the opinion of a man of great reputation, and who has spent twelve years of his laborious life in Cuba: and such is my opinion also. Are not agricultural operations, in Porto Rico, performed by whites? Nor are Cuba and Porto Rico mainly, or even wholly, dependent upon the production of one article only, as are nearly all the other Antilles. Cuba exports, besides sugar—tobacco and

coffee, and is supplied from its own pasture-lands with draught animals and flesh provisions. Porto Rico exports, besides sugar—coffee, tobacco, cotton, timber, and oxen, both for draught and slaughter; and provisions of all kinds are perhaps cheaper there than in any other island. This is, in great part, if not entirely, owing to the agency of a class of small proprietors. I have always been convinced that the existence of such a body is a necessary element in the welfare of all communities, but particularly of those which are free, and chiefly or solely addicted to agricultural pursuits. Wherever such a class does not exist, there is an immense gap left open, which the lower orders will invariably attempt to fill up—either by forcing themselves through, or dragging the higher classes into it—thus creating permanent danger to social institutions. This danger is greatly mitigated, if not entirely obviated, when there is a gradation established from the lowest up to the highest: those who start from below and above to meet in mid-range, must interchange ideas in their progress upwards or downwards, and serve as an intermediate link between the two extremities of the social scale. The formation of a class of industrious small proprietors ought to be encouraged, not by the granting of privileges—as I have heard it contended—but by the removal of obstacles from their path. Such a policy would be particularly opportune in countries where, and at a period when, by the progress of events, many families have sunk from comparative affluence into the lowest depths of misery. I do not know what was attempted elsewhere, but it is certain that, in Trinidad, whilst indirect encouragement was being given to petty shopkeepers and would-be artisans, all kinds of obstacles were thrown in the way of the small proprietors. I am ready to admit that the adoption of such opposition was a sort of desperate attempt at saving sugar-cultivation from entire ruin, and which has been so far successful. It has, however, only put an effective check to the increase of small proprietors; it has driven none to the cultivation of the staples. Time is at hand when this policy ought to be abandoned, a policy based on the sophism, *that to make people industrious it is necessary to tax them*, a policy which finds its answer in the United States, and even in Australia. Its adoption was much encouraged by the late minister for the colonies, Earl Grey; but it is evident that he and others have mistaken the effect for the cause. People advanced in civilization pay generally a large amount of taxation; *ergo*, they are civilized and industrious, because they are heavily taxed. I willingly admit that political economy has been useful in destroying many errors, but it has not been so successful in making theories practical. It is evident that legislation based on a sophism could not have been productive of permanent good. Moreover, societies, in their normal evolutions, must pass through certain stages or phases; and wisdom consists not in opposing

these natural changes, but in checking and preventing deflections, and in restraining their vital energy within certain bounds.

One of the phases of this evolution, in the West Indian freed communities, was evidently the formation of a class of small proprietors, or the aggregation of a certain number of families to that class where it already existed; and the inclination to become small freeholders must have been particularly strong in the emancipated labourers, both on account of their long dependence and the influence of climate. This desire of becoming cotters, or small freeholders, has been well developed in the great number of *squatters* formerly existent on crown-lands, and who, since cognisance has been taken by Government of their illegal occupancy, have, by the payment of a certain amount, become entitled to, and actual proprietors of, the lands their industry had brought into cultivation. This I consider a cogent argument in favour of the opening of crown-lands under certain restrictions,—were it in no other than a purveyor's point of view, and as a means of averting a scarcity of food consequent on a free influx of population.

Not only is vegetable life more luxuriant and vigorous between the tropics than in the cold and even temperate regions, but it is never dormant—since there exists a perpetual blending of spring and summer at one and the same time. But if immense quantities of raw materials are produced in the torrid zone; if the same amount of comfort may be obtained for less labour,—it is but too true that human vigour is in an inverse ratio to that of vegetable nature. Relaxation from mental as well as from bodily exercise becomes more necessary in warmer than in colder latitudes; under the former, man cannot reasonably be expected to devote more than nine hours daily to any occupation, or even then to labour uninterruptedly: his mind, above all, needs relaxation. This is, no doubt, the reason that people of the south are so partial to dancing, gambling, and all other exciting amusements, as also that they feel a preference for certain occupations. They seem, for instance, to prefer the pastoral to an agricultural life, and to be better fitted for the latter than for manufacturing pursuits.

As agriculturists, however, they may be said to exhibit a partiality for the cultivation of certain plants, viz., for the culture of those which do not require much exertion, or unremitting attention; of such as arrive most rapidly at maturity; or of those the products of which do not demand much preparation to render them marketable, nor the same amount of care or attention in their culture as the more delicate vegetables. As to those plants which require a large and constant amount of labour to render them exportable, they will cultivate them only when directly compelled by legal enactments, or indirectly by circumstances.

This is proved, I believe, not only by the history of the West Indies since emancipation, but also by that of all intertropical countries; and this is, perhaps, the main point from which sugar-cultivation has received such a check in the emancipated colonies; for it has been kept up or increased only where circumstances either compelled the people to work for a livelihood, or where indentures bound them to the sugar estates. It is to be apprehended that, not merely will that cultivation remain stationary in these islands, but that it will experience a still further decrease; but if any diminution would be a great and immediate misfortune, certainly there is no reason why we should desire a further increase. The actual price of sugar is already so little remunerative that any increased supply can hardly be desired at present. However, it is to be hoped that the low figure of the article will tend to an increase of consumption; and then it will be time to think of a more abundant supply; but, I repeat, there is no inducement whatever to augment the present production. Now, allowing that increased demand should call for increased production, the industrious cotters will probably be the principal agents of that production by the adoption of the division-of-labour method and the establishment of central factories, as is the case in Java; with this difference, however, that in Java the cultivation is carried on by contractors, whereas in these islands it would be performed by cotters. The system of central factories I consider as the most natural and also the most beneficial to all parties; but too much has already been said on this subject to call for further comment on my part in this introduction. It has failed in these colonies from two obvious causes:—1st, It necessitated, on the part of the planter, immediate sacrifices which he felt strongly disinclined to make, though they would have been followed by subsequent advantages; 2ndly, No reliance could be placed on the labouring class of cultivators; in fact, this was the great obstacle, and it will continue so for some time to come. The emancipated class being destitute of capital, the cultivation of staple products, and commerce in general, will be carried on by and through European agents. These will establish central factories, and carry on the colonial export and import trade; but the cultivation of other articles—of cacao, coffee, tobacco, spices, &c.—will probably be more widely extended than at present, because they demand neither a large capital nor much exertion. This normal condition, however, must be the result of the formation of an industrious body of small proprietors, whilst the cultivation of the cane should be kept within its present limits.

Here I must conclude this rather lengthy preliminary to a mere sketch of the island of Trinidad. But the fate of my native land being more or less intimately connected with that of the other

Antilles, I thought it necessary to offer a few remarks on the natural resources, present condition, and general importance of the West India Isles, of which it forms a not inconsiderable unit. I am perfectly aware that some of my opinions will be deemed hazardous; that others will be disapproved of by a certain class of readers,—slighted by some, and, on the same grounds, approved of by others. I must, therefore, rest satisfied if they are not judged irrational; for no one can expect to please every one —much less when the subject of which he treats is apt to generate controversy and evoke a host of conflicting opinions.

CHAPTER I.

GEOGRAPHICAL DESCRIPTION—POSITION AND AREA—HISTORICAL OUTLINE.

The Island of Trinidad is situated between 10° 3′ and 10° 50′ latitude N., and between 61° 1′ and 62° 4′ longitude W. of Greenwich; it is separated from the province of Cumana, in the republic of Venezuela, by the Gulf of Paria, together with the Dragon's and Serpent's Mouths. In figure it is an oblong, or of a rectangular shape, with promontories at its four angles, viz., Galera and Galeota to the eastward, and Mono and Icacos to the westward; these two latter stretching for several miles towards the opposite shores of Venezuela, and thus contributing to the formation of the northern and southern boundaries of the Gulf of Paria.

According to Captain Columbine, its principal dimensions are as follows:—

The north side, from Point Galera to Point Mono, 53½ miles.

The eastern side, from Point Galera to Point Galeota, 48¼ miles.

The south side, from Point Galeota to Point Icacos, 65 miles.

The western side, from Point Icacos to Point Mono, 49½ miles.

The greatest length of the island, from N. to S., is, from Grand Matelot to Casa Cruz, 50 miles; average length, 48 miles. Greatest breadth, from Galeota to Icacos, 65 miles; average breadth, 35 miles only. The superficial extent or area is about 2,012 miles, or 1,287,600 square acres.

Trinidad is bounded on the N. by the Caribbean Sea, on the S. by the channel which separates it from the Delta and Caños of the Orinoco, on the E. by the Atlantic Ocean, and on the W. by the Gulf of Paria.

Physical Aspect.—The general aspect of Trinidad is that of a level country, bearing no resemblance to the other Antilles. Its

mountains have not the towering majesty which distinguishes those of St. Vincent, Dominica, Cuba, &c.; they do not present separate summits, cone-shaped, steep, and rugged, but form three ranges running in a parallel line from E. to W., separated by two large valleys or river-basins, and being clothed from their base to their utmost summits with stately forests. The central and southern ranges are accessible on all sides; the northern range, which is abrupt on the sea-side, slopes gradually towards the intervening valley; it may be ascended, however, along the ridges or crests which separate the water-courses.

The mountains trending along the whole northern border of the island are in a style of eminent grandeur, stretching southward to the plain, and, in many places, along the gulf, down to the sea; whilst the forms of the hills are strikingly varied by the intersections of the vallies and gullies in opposite directions. The vallies in this range are few, open generally to the south, and transversal. These vallies also present a great uniformity in their general configuration, being contracted in the middle by the convergence of the ridges, and expanding at each extremity. They are level, branching off into smaller vales, and each watered by a stream, from which it commonly takes its name. Such are the vallies of Cuesa or Carenage, Diego-Martin, and Maraval, westward of Port of Spain; the beautiful and rich valley of Santa Cruz to the eastward, as also those of Maraccas and Caura. These latter are shut in, as it were, by the rise of the land at their entrance. This is still more strongly exhibited at the Valley of Arouca, which is blocked up for several miles by high hills, the river flowing between precipitous slopes. Beyond Arouca the vallies are contracted to a very small span, in fact, to mere gorges. There are, also, on the north coast, three or four glens, viz.:— Maraccas, Las Cuevas, Chupara, and Rio Grande. The Maraccas-bay valley, as it is called, to distinguish it from the valley of Maraccas, is a small semicircular plain, bounded on almost every side by steep hills, with a stream of fine water: the valley of Las Cuevas is extensive, with a copious stream of water running through it, but completely barred up at its mouth; it is the Quebrada-de-Hierro, or the Iron Ravine of the old Spanish settlers. Chupara is contracted to a mere gorge by the surrounding mountains; whilst at Rio Grande the land is undulating, and a considerable part of it flat. It does not appear that any other

vallies than the above mentioned are known, except the valley of Labranche and that of Guaracara in the central range.

Trinidad, being a comparatively newly-settled island, presents in many parts the appearance of a wild unreclaimed country. It is covered with dense and lofty forests ; the heavy appearance of an endless woodland being only broken here and there by vast savannahs, or by the efforts of agricultural industry,—except perhaps at the Naparimas, where an extensive district is under uninterrupted cultivation. Even where cacao and coffee are cultivated, the country still preserves the appearance of forest-land, since those plants are protected by the shade of the "Bois Immortel," a tree which attains a considerable size.

A cacao plantation forms of itself a most charming prospect. The trees are planted at twelve or fifteen feet apart, and range from about twenty-five to thirty-five feet in height; the leaves are large, and when young, of a violet-red hue: whilst from the larger branches and the stem, hang red, yellow, green, or dark crimson pods,—the "Immortel" itself forming a striking feature in the scenery. In January and February, the latter exchanges its leaves for a thick covering of bright red blossoms, the ground underneath being literally carpeted with flowers, whilst birds of various species, and of the most brilliant plumage, join in gay concert above. Several other trees become, at certain periods, like the "Immortel," a regular mass of flowers. Those of the Poui are of a brilliant yellow: of the Roble, an orange colour, and very fragrant: others, again, are white, pink, or violaceous.

The bamboo grows in clusters of hollow jointed reeds, and forms, as it were, an immense sheaf, about fifty feet high, from six to ten feet in diameter, and containing above one hundred stems, surmounted by a foliage resembling an assemblage of waving plumes. Sometimes they grow on each side of a river for several miles, their feathery summits uniting overhead, at intervals, in immense arches.

From some of the hills the view is often most beautiful. At the foot of the hill extensive cane-fields ; a little further, that red tract marks out a cacao plantation, beyond which is the Caroni savannah: and further yet, the expanse of the placid gulf, with the merchantmen lying at anchor in the roadstead, or beating up for the port.

A person visiting the island would meet with but very few

neat, or even comfortable, residences in the country districts—the dwellings of the planters looking rather primitive; whilst the labourers' cottages, or rather cabins, and other estate-buildings, do not contribute to make the aspect of a plantation a very pleasing one. Although nature has liberally supplied a very fine growth of fruit trees, yet the island cannot boast of even a resemblance to an orchard, except at Mr. H. Boissière's residence, Maraval, and at the Government-gardens, to the northward of the town. The only residences that can bear a remote comparison with English or French villas, are the late Mr. Burnley's country-seat, Orange Grove, in the ward of Tacarigua, and Mr. H. Boissière's "Champs-Elysées," two miles from town, at the entrance of the valley of Maraval.

Coasts.—The coasts of Trinidad are bold on the N., bluff on the S., and generally low and flat on the E. and W., where the water also is very shallow.

The north coast is rock-bound, with serried mountains thickly wooded from their summits to the very verge of the sea, which breaks in a heavy surf along the whole extent, and renders landing impossible, except at a few shelving spots; its bearing is W. by S. Passing from E. to W., we may notice the following points or promontories;—Arecife, or Reef Point, Toco, Sans-souci, Rio Grande, Petit and Grand Matelot, Chupara, Pointe-à-Vache, Saut-d'-Eau, and Maqueripe.

The south coast extends from Point Galeota on the E. to Point Icacos on the W. From Galeota to Casa Cruz—a distance of twelve miles and a half—it takes a south-western direction, and then runs due W. Between points Galeota and Casa Cruz are Grand Cuyo and Tablas; and westward of Casa Cruz, the following promontories:—Canary, Pelican, Moruga, la Ceyba, Curao, Negra, Siparia, Raja, Chagonaray, Taparo, Erin, Islote, Galfat, and Quemada.

The eastern coast stretches from Point Galera on the N., to Point Galeota on the S., and appears by nature to be divided into four sections, which respectively bear the names of Cumana, Matura, Cocal, and Mayaro. The first section extends from Galera to Point Salibea—a distance of thirteen miles; it has a south-western direction, and terminates the northern range on the E. Point Galera is low and rocky, with a constant heavy surf breaking on it: from Galera to Cumana the coast is very rocky and wild, with only one landing place—within Forest Point.

Along the Cumana section are the following promontories:—Forest, Cumana, Balondra, Salibea, and Matura. Ten miles southward of Cumana Point, is Point Manzanilla, presenting high cliffs towards the sea, and trending suddenly westward by S. for about two miles. The line of coast, from Cumana to Manzanilla, is a sandy beach, running S. by E. From Manzanilla to Point Mayaro—a distance of twelve miles—the whole extent consists of a low sandy beach, running S. by E. This section is separated from Mayaro by a lofty promontory, or small peninsula, called Point Radix; it is about two miles in extent, hilly, presenting everywhere to the seaboard high perpendicular cliffs, terminating in two lesser points, viz.: Point Guataro on the N., and Point Mayaro on the S. From Mayaro to Galeota, the distance is fourteen miles. Here again the coast is a sandy beach, rising gradually towards Galeota; at a short distance from the sea the ground rises into sloping hillocks. Cape Galeota is a high, rocky promontory, running S.E., and then trending N. by W., so as to form a small peninsula, sloping towards the northern or land side; it is connected with the mainland by a neck of only one mile in breadth, covered with mangroves.

The western coast forms a nearly semicircular curve. The north-western angle of Trinidad, it would seem, has no name: as a suggestion, it may be called Point Mono. It rises in a lofty promontory, about two miles and a half in breadth, with two points encircling a small cove; the northernmost might bear the name of Mono, the southern retaining that of Current Point. From the latter to the town of Port of Spain, the coast runs E. by S. for about twelve miles, and terminates the western extremity of the northern range. From Port of Spain to the mouth of the Guaracara—a stretch of twenty-five miles—it takes a southerly direction, the ground being low, and in many places swampy, and covered with mangroves. From the mouth of the Guaracara to the lagoon of Orapuche—a distance of nearly nine miles—its bearing is S. by W., and from Orapuche to Cape La Brea—a further distance of five miles—it stretches nearly due W.; from Point La Brea to Point Icacos it runs W. $\frac{1}{4}$ S. for nearly twenty-four miles. Besides Point Mono and Current Point already mentioned, we meet, westward of Port of Spain, with Punta Gorda, or Big Point, formed of compact limestone, and which divides the port of Chaguaramas from that of Carenage.

Southward of Port of Spain are the following points or landmarks:—Large Point, Chaguanas, Cascajal, Cangrojos, and Savanetta—all very flat and muddy; Lisas and Pointe-à-Pierres, or Stony Point: south of San Fernando, Sandy Point, very low; Cape la Brea, which succeeds, is formed of hardened pitch or bitumen. Between La Brea and Icacos we meet with the following points:—Guapo or Fortin, Ligoure, Pointe-noire or Grandeville, Pointe Rouge, Cedros, and Los Gallos, or the Cocks. Icacos, the south-western angle of Trinidad, is a low, sandy peninsula, intersected by several lagoons.

The northern, southern, and eastern coasts are nearly destitute of harbours. "Between the Bocas and Chupara," says Captain Columbine, "there are some large bays, but so much swell sets into them, and the wind is so uncertain and light, close in shore, that it is dangerous to anchor a ship in them, except in those of Maraccas and Las Cuevas.

"Maqueripe is a cove at the northern extremity of the valley of Cuesa; Saut-d'Eau is a very small sandy cove; Las Cuevas is a sandy bay; the sandy shore on the eastern side of it is richly wooded, almost close to the sea, interrupted by several breaks of the woods filled by long winding slips of sand and varied by high rocks and smaller rivulets mingling fancifully amongst them. A mile to leeward of Las Cuevas, is the deep bay of Maraccas, open to the north, but affording more shelter than any other on this part of the coast. From Las Cuevas to Toco, the coast is chiefly rocky and high, with a few sandy bays which generally contain a small river; but the surf is so heavy that these bays are scarcely more accessible than the rocks; the only places which we could find were at Rio Grande, Petit Matelot, Trou Bouilli, and Paria Bay. There is also a very small circular cove about half a mile to the N.E. of Madamas, where a drogher might lie in smooth water with the greatest security, being within the breakers; it is closed round with steep rocky cliffs, and did not appear to have any communication with the surrounding country. It is very difficult to land at Rio Grande bay; the early part of the morning is the best time, before the sea breeze sets in. A heavy sea breaks all along the shore, from Rio Grande to Toco, the few landing places being only small openings amongst the breakers; and even these are not practicable at all times. The bay of Toco is safe with good landing."

During the prevalence of the northerly winds, from November to May, a heavy surf breaks constantly along this coast, and it becomes difficult and even dangerous to attempt landing, except at Maraccas bay, and then only in canoes; vessels also that anchor in the bay, will often find it a hazardous task to leave their anchorage, the wind being right ahead and the entrance narrow. The depth of water along the northern coast varies from three to twenty-five fathoms, with a good bottom.

The eastern coast is very shallow, with a heavy surf throughout, but particularly at Matura and the Cocal; the depth of water varying from three to ten fathoms. The only anchorages and landing-places are at Forest Point, Cumana, three miles and a half from Point Galera, and in Balandra and Salibea bays. The former of these two bays is small but safe, and the water bold enough to receive trading schooners and droghers; the latter hardly merits the term of bay, but a vessel might find tolerable shelter within it, under cover of a small rocky island. To the S. of Point Manzanilla is a small harbour, completely rock-bound, with a good landing at the mouth of the Lebranche river. This harbour, formed by rocky islets, is of sufficient depth for any vessel not drawing more than nine feet of water; and, although very small, it is the best on the east coast, and with some little improvement, would afford an available anchorage to droghers. Off Point Manzanilla is a sunken rock called the Carpenter, upon which a slaver struck and was wrecked in the year 1802. There is also a pretty good landing place to the N. of Point Radix, at the mouth of the river Guataro, called la Chaussée, a well-known place for turtle. The surf, although still very heavy along the sea-board of Mayaro, does not impede the landing on part of the coast—especially under the lee-side of Point Mayaro—when proper precautions are taken, and strong boats used for the purpose.

The southern coast is generally bluff, and the sea shallow throughout the channel, the depth of water varying from three to thirty-seven fathoms, with excellent bottom. From April to October—during the overflow of the mighty river Orinoco, which discharges part of its waters into the channel—strong currents prevail, bearing westward. Besides the following landing places, viz.: Moruga, Erin, and Quemada—there is, on this coast, the small port of Guayaguayare, at the S.E. extremity of the southern coast, between Galeota and Grand Cayo, or Pointe Taillée. This

latter is a high bluff promontory, forming the western limit of the bay or port of Guayaguayare, whilst Point Galeota forms its eastern boundary. It has a pebbly bar across its entrance, extending from Grand Cayo to Galeota, and is open to the S.S.E. It may, however, be considered a safe harbour, though it cannot admit vessels of above fifty tons, the depth of water being from two to four-and-a-half fathoms only.

The soundings along the western coast are, generally, very shallow, with exceptions, however, of considerable depth, in a few places, particularly at Chaguaramas, Carenage, and opposite the village of Cocorite, to the westward of Port of Spain; also at Pointe-à-Pierres and La Brea. Chaguaramas is a land-locked harbour at the N.W. extremity of the island, extending between Current Point and Punta Gorda. The islet of Gasparil, which stretches nearly from Punta Gorda beyond Current Point, contributes to its formation and protection on the S. There are two entrances to the bay of Chaguaramas; the north-eastern is sheltered by a small islet called long island; the western entrance is likewise protected by a rock called Little Gasparil, which divides the same into two channels, the one between Little Gasparil and Gasparil Grande, affording a passage for large vessels, and the other for smaller craft only. The port of Chaguaramas is perfectly safe at all times, and the water bold. Separated from Chaguaramas by the small rocky peninsula of Punta Gorda, is the port of Carenage, well inclosed and as safe as the former. Captain Columbine has the following remarks on Carenage and Chaguaramas:—

"The want of a sufficient depth of water in the Carenage renders it useless for men-of-war.

"The harbour of Chaguaramas is very spacious; but, in case the enemy should have such temporary superiority by sea as to enable him to attack this island, our ships could not be protected here, as the mountainous nature of the country could afford him many points from whence he might easily destroy them.

"The situation which presents itself as the most proper to place naval magazines, with the probability of their being effectually defended, without any extensive works, is the island of Gasparil Grande. It has two principal hills, one to the east end, the other near the middle, affording powerful means of

defence. On the south side there is a cove large enough for the purpose of repairing and heaving down a ship of the line, where store-houses to any extent might be erected, covered from the view, though not from the shells, of a besieging enemy. With respect to the security of our fleet, the only place, in my opinion, capable of affording it, is the south side of this island. Westward from the above cove the shore is quite bold, and it should be proper to anchor close to it, in order to cover the ships from hot shots, which the enemy might throw from the outer point of Diego's Isle, a spot which he would occupy with that intent, unless we had works on Chaguaramas heights."

In addition to these two lesser ports, the Gulf of Paria forms one extensive harbour, in which vessels may anchor, from three to twenty fathoms, on a bottom of gravel and mud; in fact, vessels coming to Port of Spain very often run into the soft mud in order to gain a nearer approach to the wharves. Captain Columbine again remarks regarding Port of Spain :—" The water in the road of Port of Spain is very shallow; a mile and a half off there are only three fathoms; it is extremely foul and muddy there, and near the shore it is proportionally more filthy. The course of the tides both ebb and flood, being checked by an opposite shore, in the corner where the town stands, they naturally must deposit there much of the mud which they carry along with them : the obvious result is that, in process of time, Port of Spain will be an inland town; this operation of nature appears to be going on fast, and to be without remedy."

The Gulf of Paria may be considered as a sort of salt lake, being shut in, on the eastward, by the island of Trinidad, which thereby breaks the roll of the Atlantic; on the westward, by the adjoining part of the province of Cumana; on the northward, by the Peninsula of Paria, the north-western angle of Trinidad, and a few intervening islets; on the southward by the corresponding portion of the Delta of the Orinoco, the south-western angle of Trinidad, and some interposed rocks. Passages are formed on the N. and S. between the islets; also between the latter and Trinidad, at one extremity, and Venezuela at the other. The northern passages are known as the Bocas del Dragonor, the Dragon's Mouths; the southern, as the Bocas de la Sierpe, or the Serpent's Mouths.

The islet nearest to Trinidad, in the formation of the Dragon's Mouth is, Monas, or Apes' Islet; the next, Huevas, or Eggs', and lastly, Chacachacarreo. These islets present precipitous cliffs to the N., and can be approached only on the gulf side. The different passages or channels known as the Dragon's Mouths bear the respective names of Monas, between the mainland; and Monas-Huevas between Monas and Huevas—Navias, or Ship's passage, between Huevas and Chacachacarreo; and the Boca Grande, or Grand Mouth or passage, between Chacachacarreo and Cape Peña, which is the easternmost extremity of the Peninsula of Paria. The Monos channel gives admittance only to sloops and schooners, or steamers: the depth of water is from 10 to 20 fathoms, but the channel is very narrow. Huevas passage allows entrance to vessels bound inward: the water is very deep and bold—from 10 to 40 fathoms. The islet of Monas being very elevated (1,000 feet) shelters the passage from the easterly winds, so that vessels entering run the risk of being becalmed if much in shore of the islet. Boca de Navias, or Ship's Mouth, between Huevas and Chacachacarreo, has a north-western direction, and is the outward-bound passage. The Grande Boca is about 12 miles in breadth: it is the safest passage for vessels bound both inward and outward, and is that which although more to the leeward of Port of Spain, is chosen by men-of-war and the larger class of merchantmen.

The ebb or flow of the tide determines the direction, inward or outward, of strong currents in the Dragon's Mouths; and vessels becalmed in the Huevas and Navias passages may be drifted on the rocky sides of either island and wrecked. The southern entrance of the Gulf of Paria is divided into several passages by rocks; those nearest to Point Tracos are known as Los Lobos, or the Wolves; and about the middle of the strait is El Soldado, or the Soldier Rock; the three channels formed by them and the mainland, are called the Serpent's Mouths. The Soldier is 120 feet above the level of the sea; the Wolves are sunken rocks. Strong currents prevail in the southern as well as in the northern passages.

Mountains.—The island of Trinidad is divided in an E. and W. direction into two basins or drainage-valleys, by three ranges of mountains or high hills, varying from 600 to 3,100 feet above the level of the sea. The northern range is the most elevated,

and stretches along the northern shore from Point Galera to Point Mono—the highest ridge of the whole range being, it appears, at the back of Rio Grande. The Tocuche, between Maraccas and Las Cuevas, is 3,100 feet; westward of this highest summit the mountains are about 2,200 feet; eastward, they are from 2,500 to 3,000 feet.

The southern range seems to be less elevated than the other two, particularly to the westward, where it gradually declines and terminates in the low sandy point of Icacos. This range is loftiest between Guayaguayare and Moruga, and the highest summit (about 1,200 feet) lies N.N.W. of Gran Cayo. The northern and southern ranges are parallel.

The middle or central range runs W.S.W. from Point Manzanilla to Pointe-à-Pierres: it offers three culminating points,—Labranche (1,200 feet), to the eastward; Mont Serrat, to the westward (1,190); and Tamana (1,150), nearly in the centre of the island.

Between these three ranges are comprised two basins or drained tracts, extending from E. to W., and which may be denominated the northern and southern basins: the former is, generally, more level than the latter. Each of these superior basins is, by nature, subdivided into two secondary basins or plains, by a plateau or table-land. The two subdivisions of the northern plain may be called the Oropuche basin, on the E., and the Caroni, on the W.: the two sections of the southern plain may likewise be termed the Guataro basin, on the E., and the Great Lagoon, on the W. To these four basins may be added the following: the Labranche, at the eastern, and the Guaracara basin at the western, extremity of the central range: these are two valleys formed by a bifurcation of that range.

Rivers.—These plains are watered and drained by an immense number of rivers and rivulets, and the flanks of the mountains deeply rent and furrowed by innumerable ravines. Proceeding eastward from Port of Spain, we meet, in the northern division, with the following perennial water-courses: the Aricagua, or San Juan's, the St. Joseph's, the Tacarigua, Arauca, Oropuna, Mujico, Arima, Maturita, Guanape, Mamo, Aripo, and Valencia. All these streams have their sources in the northern range. After receiving the Valencia on the left, and the Mamo on the right, as also the Cumuto, from the Tumana ridge, the Aripo river unites

with the Guanape, to form the Caroni, of which the Aripo may be regarded as the true origin. The Maturita and Arima are affluents of the Guanape: the other named rivers discharge their waters into the Caroni, except, however, the Aricagua, which is lost in the sandy soil before it reaches the Caroni. The Aripo takes a southerly direction, with a bend to the W.; the course of the Caroni is very nearly due W., and it has its embouchure in the gulf about two miles S. of Port of Spain. Besides the above tributaries, the Caroni receives the Tumpuna and Arena from Tamana. It flows through a low and partly swampy district, and has a very winding course: its banks are high and steep in the former part of its course, and the water shallow; approaching the swamps the banks are on a level with the adjoining lands, its bed deepens to several feet, and it may be ascended for several miles by the flats of vessels loading or discharging in the harbour.

Proceeding eastward, we meet with the following streams:— The Cuare, with the Turure and La Ceyba, its tributaries; the Oropuche, which receives the Cuare on the right, and the Rio Grande on the left side; they all rise in the northern range, and run in a southerly direction, curving to the E. The Oropuche receives from the central range the Cunapo and its affluent the Guayco, also the Sangre Grande and Sangre Chiquito, which are themselves formed by the aggregation of a number of small ravines; the Oropuche has its outlet nearly in the centre of the Matura Coast.

It becomes evident, from this description, that the dividing table-land lies between Valencia and Cuare, and extends, southward, to the central range, dividing the waters of the Cumuto from those of the Guayco and Cunapo. Besides the Oropuche and its affluents, we meet farther eastward with the Matura, Salibea, and Tumpire, which have their mouths in Matura, Salibea, and Cumana bays, respectively; the Matura is the largest of these currents, the other two being mere mountain-streams.

In addition to the Caroni and its affluents, there are in the Caroni basin several other water-courses worth mentioning, some of them being natural canals or outlets for the waters of the extensive swamp which forms, as it were, a Delta to the Caroni; such are Blue River and Cipriani's Canal. The Chaguanas River, which seems to rise in that part of the central range connecting Tamana and Montserrat, has first a north-westerly course, and dis-

charges its waters into the gulf, to the S. of Cipriani's Canal; next come the Hondo, Caparo, Arena, and Couva, all having their sources in the central range, and their outlet in the gulf.

The southern plain is watered by a number of small streams, and a principal river called the Guataro. In the lagoon basin the following water-courses are worth noticing:—the Cipero, southward of the town of San Fernando, flows from the district of Savannah Grande, and drains part of that of Naparima; about one mile and a half from its mouth is a shipping place, whither flats are sent to take off produce. Eastward of La Brea are the Aripero, or Silver-stream, and the Roussillac; southward, the Bravo, or Vassini's River, the Gunpo, and Capdeville, with a number of smaller ravines; all these water-courses spring from the high land of the interior, and form separate streams which flow into the gulf. Between the Cipero and Aripero, however, lies the Oropuche or Grand Lagoon, which may be considered as the great drain of the lagoon basin. It is an extensive swamp, studded with mounds of a black soil, clothed with rank vegetation, and intersected by channels expanding, at intervals, into ponds covered with reeds, rushes, and other aquatic plants or trees. A great number of streams, flowing from the surrounding undulating districts, supply it with much more water than might be at first imagined. The Lagoon discharges its waters into the gulf by two principal outlets—Mosquito Creek or Blazini's River, and Godineau's River.

The eastern division of the southern plain is drained by the largest river in the colony, the Guataro, or Ortoire. Its course is imperfectly known; it may, however, be traced from the Montserrat heights, running southward, then eastward, and its mouth opens on the eastern coast, immediately northward of Point Guataro. Its tributaries are partly from the central range, the principal being the Maora, Bell's Creek, the Fossi, Lunapure, Laranache, Anapo, and a number of small ravines, and partly from the high lands to the south. The river Guataro is made on Mallett's map to communicate with the Nariva by means of navigable canals; but no such communication exists.

The Labranche valley is watered by the Labranche and a few ravines; the Labranche itself has its source in the group of the same name, and its mouth to the southward of Manzanilla Point. The Guaracara valley is watered by the Guaracara, which descends

from the Montserrat range, and discharges itself into the gulf, southward of Point-à-Pierre; the St. John and the Tarouba are also currents of this valley.

Between Manzanilla and Mayaro, at the basis of the Labranche group, and parallel with the Cocal, is an extensive swampy tract, cut up by several canals, which concur in the formation of the Nariva. This river, or rather natural canal, runs northward, and nearly parallel with the shore, till it meets with the high land of Morne Calabash, when it curves in an opposite direction southward, to discharge itself nearly in the centre of the Cocal; hence its name of Mitan, or Middle River. The Nariva cannot be said to have any current, since the flow is upwards at high tide, and downwards at low tide only; it is very deep and wide near its mouth, and receives all its waters from the central range.

The rivers on the N. and S. coasts may be regarded, in general, as unimportant. They are, on the N., Rio Grande, Tiburon, Madamas, Paria, Macapou, Chupara, Las Cuevas, and Maraccas; on the S. the Lizards and Pilot rivers discharge their waters into the bay of Guayaguayare; they are both tidal streams. Between Points Canari and Pelican, are three small rivers; then comes the Moruga, westward of Point Moruga, a tidal stream also, and the largest of all; and, in succession, La Ceyba, Curao, Siparia, and Erin, to the leeward of the corresponding promontories.

The different water-courses above mentioned present a few general characteristics which require notice. Those that take their rise in the northern range have clear and limpid waters, running over pebbly beds; those from the central range flow between steep banks, and over muddy bottoms, their waters being turbid and yellow—as, for instance, the Cumuto and Tumpuno, the Cunapo, Sangre-Chiquito, &c. Several of these streams, but especially those which take their rise in, or only flow through, swampy districts, have dark-coloured waters; such as the Nariva, Mosquito Creek, the Godineau, &c. The water, however, though dark, is perfectly clear, the discoloration arising from the long maceration of leaves, bark, and other vegetable *débris* in water almost stagnant.

Rivers falling into the gulf, particularly the Caroni and Couva, are obstructed at their mouth by *basses* or shallows. The shallow at the entrance of the Caroni extends upwards of a mile into the gulf, and presents somewhat of an impediment to the coastwise

navigation. More than once vessels beating up for Port of Spain have run aground on its mud-bank. These shallows are formed by the gradual accumulation of stumps, branches, and even entire trees, carried down the stream during the rainy season, and which, sticking in the soft ground, remain to form an embankment with the alluvial deposits; such accumulation and deposits are greatly aided by the nearly constant direction of the prevailing winds, there being no surf at all along the western coast to disturb the formation of such deposits. On the other hand, to the eastward, where a heavy surf incessantly rolls over the beach, also to the northward and southward, where the coast is generally bluff and the shores steep, all the rivers, with the exception of the Labranche, which empties itself under the cover of a rocky hill, have, across their mouths, bars of sand, resulting from the antagonism of the waves and the currents of the streams. The consequence is, that such of our rivers as are of a depth sufficient to admit small craft can be entered only at high tide, when there is a sufficiency of water on the bars and shallows to allow of their being crossed. During the dry season, some of the rivers thus obstructed by bars, become lost in the sandy beach, and may be said to *ooze* into the sea; of this, the Oropuche is an instance. The shallow at the mouth of the Caroni sometimes forms a species of dyke from one to two feet high. The beds of many of these rivers are so much beneath the level of the sea, through the greater part of their courses, that, in the dry months, they are quite salt; in the wet season, however, the torrents of rain pouring into them force out the salt water, and they become perfectly fresh. The Guataro is said to be salt, during the dry season, for eighteen miles upwards.

The above brief and general view of the geography of Trinidad shows that the island is of a nearly rectangular form, and that it is divided, by nature, into two great valleys running east and west, and of almost the same form and extent. As a result of the direction of the middle range, the northern valley is more contracted at its eastern, and the southern at its western, extremity. Each of these two valleys is subdivided into two secondary basins of unequal areas—the Caroni basin being more extensive than that of Oropuche, and the Guataro basin than that of Sipero.

Well marked is the contrast between these two portions of

Trinidad. The northern division is more mountainous; the range, in that direction, attaining an elevation of two and three thousand feet. The ground rises gradually from each extremity towards the centre, and from the depth of the valley, on each side, towards the ridges. The southern portion is less mountainous —the middle and southern ranges reaching the height of about 1,200 feet, whilst intermediately the country exhibits more or less of gradation; a uniformly undulating surface being succeeded on the N. and S.E. by a hilly, and, in some parts, a broken region.

In the northern section the rivers are, generally speaking, larger; such as the Matura and Oropuche, to the eastward; the Caroni, Chaguanas, and Couva, to the westward; the only large river in the southern section is the Guataro. Nevertheless, the rivers, which from the southern range flow in a southerly direction, are larger and more numerous than those which from the northern range have a northerly course. The Caroni swamp, in the northern, is corresponded to by the Nariva Lagoon, in the southern section; but the Oropuche or Grand Lagoon has not its counterpart in the northern section, unless Oropuche be taken as such.

There are no ports on the eastern coast; but, as a compensation, easy communication may be established with the gulf by means of wheel or even tram-roads; so that the produce, from eastern and intervening districts, may be easily brought to the shores of the gulf. It was once in project to connect the Oropuche with the Caroni by means of a canal. I fear, however, that canal communications will not answer in a country like ours, where there exist no considerable water-courses, and where the rains are so heavy at one season as to cause partial inundations, and the drought so protracted at another as to dry up the ravines, and even portions of the larger streams for several weeks at a time; under such circumstances, tram-roads deserve a decided preference.

None of the other islands, I believe, offer such advantages as Trinidad in an agricultural point of view. Even its highest summits are not inaccessible to beasts of burden, and there the soil is commonly of excellent quality. The area of the island is about 2,012 square miles, or 1,287,600 acres; of this quantity not more than 213,292 are appropriated, of which about 53,000

acres only are under cultivation, the rest still belonging to the crown.

Monotony may be said to be the characteristic feature of the country; and this tameness of scenery arises not so much from a general evenness of surface as from the vast and almost unbroken series of virgin forests, which still cover nearly the whole of its extent; and thus this beautiful and fertile colony, capable of supporting, according to a most moderate calculation, 300,000 inhabitants, at present maintains the unimportant aggregate of 70,000 individuals.

HISTORICAL OUTLINE.—Trinidad was discovered on the 31st of July, 1498, by Christopher Columbus on his third voyage to the New World. "On the 31st of July," says Washington Irving in his life of Columbus, "there was not above one cask of water remaining in each ship, when about mid-day a mariner at the mast-head beheld the summit of three mountains rising above the horizon, and gave the joyful cry of—Land! As the ships drew nearer, it was seen that these three mountains were united at the base. Columbus had determined to give the first land he should meet the name of the Trinity. The appearance of these three mountains united into one, struck him as a singular coincidence; and, with a solemn feeling of devotion, he gave the island the name of 'La Trinidad,' which it bears at the present day."

It appears that Columbus first approached the south-eastern point of the island, and gave it the name of Punta de la Galera from the peculiar shape of a rock, closely resembling a galley under sail; this designation was afterwards exchanged for that of Punta de la Galeota, of similar signification; the former name now designating the north-eastern point. Columbus then coasted the southern shore, and entered the Gulf of Paria, between Point Icacos—which he called Punta Arenal—and the Wolves' Rocks. On the 2nd August, he cast anchor "to leeward" of "El Gallo." To the pass itself, from its dangerous appearance, he gave the name of "Boca de la Sierpe," or the Serpent's Mouth; to the gulf that of "Golfo de la Balena," "Golfo Triste," or the Whale's Gulf, and the Dull Gulf; and to the northern pass that of "Boca del Dragon," or the Dragon's Mouth.

"Columbus," again says Irving, "was surprised at the verdure and fertility of the country, having expected to find it more parched and sterile as he approached the equator; whereas he

beheld groves of palm-trees, and luxuriant forests sweeping down to the sea-side, with fountains and running streams. The shores were low and uninhabited, but the country rose in the interior, was cultivated in many places, and enlivened by hamlets and scattered habitations. In a word, the softness and purity of the climate, and the verdure, freshness, and sweetness of the country, appeared to him to equal the delights of early spring in the beautiful province of Valencia."

Trinidad, however, was for a long time neglected, probably on account of its proximity to the continent, which latter must have offered greater inducements to settlers. It was first populated by a few Spanish families, who established themselves on the banks of the river Saint Joseph and formed the village of San Jose de Oruña. In 1780, the number of the colonists did not exceed a few hundreds. About that time, M. Rome de St. Laurent, a colonist from Grenada, visited Trinidad and was much struck with the great capabilities of the island. He therefore immediately proceeded to Caraccas to propose to the government a scheme for procuring a rapid influx of settlers. His views were adopted, and his plans approved; and a first cedula, or decree, was granted, in the year 1781, by the court of Spain for encouraging immigration. Emigrants from the French islands, and a few Irishmen, with several respectable coloured families, then began to form settlements in the island.

In 1783 a second and more explicit cedula was issued—granting, on certain restrictions, to each white person, of either sex—being a Roman Catholic—a free grant of thirty-two acres, and half that quantity for every slave he should possess; and to each free coloured person, of either sex, half the quantity of land granted to whites, and similarly, half the quantity for each slave.

Article six stipulated that no personal tax should be levied on the settlers, except an impost of one dollar for each slave, but this only after the new settler had been ten years in the colony. They were also exempted from various other taxes for the same period of ten years. Total population in 1783, 2,763, viz., 126 whites, 295 free coloured, 310 slaves, and 2,032 Indians.

This liberal measure induced a steady influx of population from Grenada, St. Lucia, Martinique, Guadaloupe, and San

Domingo, so that in 1798 the population had increased to 17,718 individuals, of whom 2,151 were whites, 1,082 Indians, 4,476 free people of colour, and 10,009 slaves. The colony, in the meantime, had rapidly progressed, being French in everything but government. In fact, the French had, in a great measure, superseded the Spanish language, and all public documents were published in both languages. Even after the capitulation of the island to the British forces the French idiom was preserved together with that of the conquerors, for all public purposes, until the year 1823, when the English language exclusively was adopted.

It appears that it was only in the year 1730 that a governor was appointed, for the first time, to administer the affairs of the island, and from that year to the year 1784 thirteen governors successively filled office. In September, 1784, Don Jose de Chacon entered on the administration of the colony, and that at a very critical moment. England being then at war with Spain, a British expedition, consisting of twenty vessels, and about 10,000 men, sailed from Martinique in February, 1797, under Admiral Harvey and General Sir Ralph Abercrombie, to take possession of Trinidad. The island was defended by five men-of-war, and about 2,200 troops. The issue was that, without even firing a gun, Trinidad was surrendered to General Abercrombie, upon the terms of a capitulation. The island was afterwards ceded and guaranteed in full possession to his Britannic Majesty, by the fourth article of the treaty of Amiens.

Lieutenant-Colonel Picton, aide-de-camp to the general, was appointed governor, and may be said to have ruled the island with a rod of iron, either as sole governor, or in joint commission with Colonel Fullarton and Admiral Hood, for a period of six years. The colony has since been governed by the following officers:— By General Hislop, from 1802 to 1810; Lieutenant-Colonel Tolley (*ad interim*), from 1810 to 1813; Sir Ralph Woodford, from 1813 to 1828; Sir Lewis Grant, from 1829 to 1833; Sir George Hill, from 1833 to 1841; Sir Henry Macleod, from 1841 to 1846; and by Lord Harris, from 1846 to 1854. The present governor is Rear-Admiral Charles Elliot.

CHAPTER II.

GEOLOGICAL VIEW.—MINERAL SPRINGS, PITCH DEPOSITS.—SOIL AND VEGETATION.

THE island of Trinidad has evidently been detached from the adjacent peninsula of Paria. Of this we find numerous proofs in the animal and vegetable kingdoms, as also in the geological structure of the island; and this must be evident even to the least initiated.

In the animal kingdom, we find the following objects for comparison:—the Howling Monkey and Weeping Ape, among quadrumana; the Tiger-cat, or Ocelot, the Gato-melao, or Taïra, and the Otter, amongst carnivora; the Lapo among rodentia; the Tatou, or Cachicame, with the great and small Sloths, among edentata; the Guazoupita amongst ruminantia; and the Pecari among pachydermata. In the feathered tribe, I may mention, among numerous species, the vultures Papa and Urubu; the Crested Gavilan (*Spizaetus ornatus*), the Campanero, and the Yacou, with several pigeons; the Macaw, the Guacharo, the Kamichi, and Red Ibis; also several ducks, &c. The tribe of reptiles supplies the following identical species:—the Morocoy, or Land Tortoise, the Galapa, or River Tortoise, among chelonians; the Mapipire and Coral Snakes, the Macaouel and Huillia (boas), among ophidians; the Pipa and Paradoxal Frogs amongst batrachians; the Malo (*Salvator Merianæ*), and a few others. We have also several fresh-water fish, which are found on the neighbouring main, viz.: the Cascaradura and Guabine; as also some kinds of insects which are not inhabitants of the other Antilles—among them the Lanthorn and the Parasol-ants.

The analogy between our Flora and that of the peninsula of Paria is also well defined. The stately Moriche Palm, the useful Timite and Carata, adorn the savannahs and woodlands alike of Trinidad and of Venezuela; the Mora Tree forms here, as it does there, immense forests; the Poui, the Cyp, Roble, and Copaiba

may be reckoned among our timber; among our lianes, the Bauhinia and Bambusa (Chusquea), with many Orchids.

The resemblance between the island and the continent, however, becomes more striking still, when we come to consider the geological structure, and consequent surface disposition of the country. We can follow the direction of the mountains of Paria to Cape Galera, through the Dragon's Mouth: the islets which contribute to the formation of the passages, representing so many peaks which, having resisted the convulsions of nature, and remained above the waters when the lower parts were submerged, are to us as so many witnesses of a past cataclysm: just as the highest summits between Diego-Martin and Cuesa, and those to the westward of the latter, might probably become if the valley they form were sunk and invaded by the sea. All our vallies are transversal to the northern ridge and directed southward—only a few insignificant glens opening to the north, exactly as in the peninsula of Paria.

"The chain of calcareous mountains of the Brigantine and Cocollar," says Baron von Humboldt, "sends off a considerable branch to the north, which joins the primitive mountains of the coast. This branch bears the name of Sierra de Meapire.

"When standing on the summit of the Cerro de Meapire, we see the mountain currents flow on one side to the Gulf of Paria, and on the other, to the Gulf of Carriaco; east and west of the ridge there are low marshy grounds, spreading out without interruption; and if it be admitted that both gulfs owe their origin to the sinking of the earth, and to rents caused by earthquakes, we must suppose that the Cerro de Meapire has resisted the convulsive movements of the globe, and hindered the waters of the Gulf of Paria from uniting with those of the Gulf of Carriaco. But for this rocky dyke, the isthmus itself, in all probability, would have had no existence; and from the Castle of Araya, as far as the Cape of Paria, the whole mass of the mountains of the coast would have formed a narrow island, parallel to the island of Margarita."

No such dyke existing where the mountains were rent in formation of the *Bocas*, Trinidad was thus and then severed from the continent; and even at the epoch of the discovery of Trinidad by Columbus, the Indians entertained the opinion that the catastrophe had taken place at a not very remote period. Previous to

that event, the gulf of Paria was, in all probability, a lagoon, or lake, formed in the delta of the Orinoco.

At present, and by the gradual accumulation of deposits from the low plains of the Tigre and the vicinity, the waters of the gulf are receding; "and," according to Baron von Humboldt, "if the level of the soil seems to indicate that the two gulfs of Carriaco and Paria formerly occupied a much more considerable space, we cannot doubt that, at present, the land is progressively extending."

The presence of bitumen on the mainland, in the gulf of Carriaco, and at El Buen Pastor, near the *Rio Areo*, as also its existence in the Gulf of Paria, and throughout the southern division of the island, is another proof of the geological connection existing between the two countries; and that connection may be traced across the gulf, by drawing a line from La Brea to El Buen Pastor—a distance of 105 miles.

At Manzanilla, between the Point and Oropuche, muriatiferous clay is met with; it is of a smoke-gray colour, like that of Araya, and apparently lies on sandstone. Not only was Captain Columbine deceived during his survey of the eastern coast, but several others have been bitterly disappointed at finding salt rills where they expected fresh water to quench their thirst. "On our first attempt," says Captain Columbine, "to reach the Oropuche, we perceived a few small drains of water on the sides of earthy cliffs along the shore, perfectly salt, although far within the range of the sea, and at least twenty and thirty feet above high-water mark; but three or four days afterwards rain having fallen, they were found to be fresh."

Baron von Humboldt considers the Brigantine and Cocollar as being of Alpine formation. He says: "Three great parallel chains extend from east to west; the two most northerly chains are primitive, and contain the mica-slate of Mucanao and the San Juan valley, of Maniquarez and of Chaparipari. These we shall distinguish by the names of cordillera of the island of Margarita, and cordillera of Araya. The third chain, the most southerly of the whole, the cordillera of the Brigantine and of the Cocollar, contains rocks only of secondary formation; and what is remarkable enough, though analogous to the geological constitution of the Alps westward of St. Gothard, the primitive chain is much less elevated than that which was composed of secondary rocks."

It is evident that our mountains also belong to the same formation.

Excepting Mr. C. Deville, who made but a short stay in Trinidad, no professional geologist has ever visited this island; but that gentleman's work on the Antilles is still in print, and part of it only has yet been published, so that it is rather difficult for me to give any account or comprehensive view of the geology of Trinidad. I must, therefore, be satisfied with offering only a descriptive outline of our mountains and soils.

The transition limestone is met with in nearly every part of the island; it is abundant at the islets which contribute to form the Bocas channels, and there exist, at Huevas and Gasparil Grande, natural caves in that formation. The same rock is apparent at Punta Gorda, in the mountains which border our vallies between Diego-Martin and Cuesa, in the valley of Maraval—particularly on the Moka estate—in Santa Cruz, near Port of Spain, and all along the northern range. At the heads of the Aripo and Oropuche rivers are likewise to be seen caves, ornamented with beautiful stalactites and stalagmites. I have also heard from a Chayma Indian living in the neighbourhood, that near the latter river the soil is rent, in many places, into deep chasms. Both caverns are haunted by Guacharos, of which they form the abode. Limestone was also observed to the eastward of Mount Tamana, on the track leading to the Cocal; it is, therefore, highly probable that it would be found in the Labranche range, as also at Manzanilla, which is a continuation of the same, and at Montserrat, on the westward. Our limestone is, in general, compact, of a bluish-gray colour, destitute of petrifications, and traversed by veins of calcareous spar. Its beds, as may be seen in the quarries near Port of Spain, are largely admixed with clay and marl.

On crossing a ridge called the "*Saddle*," between the Moka estate, in Maraval, and the valley of Santa Cruz, we meet with a friable limestone of a yellowish colour; the same occurs at Chacachacarreo. Also in the district of Savanna Grande, and in several parts of the Naparimas, are to be seen breccias, composed almost entirely of seashells, but particularly of ostracites. Small crevices sometimes occur in the calcareous rocks, lined with a beautiful crystallisation of carbonate of lime, of a topaz colour.

Gypsum is also abundant; there is a pit of it near the town of

St. Joseph, at the foot of the mountains, and adjoining the royal road; this gypsum is very white, containing native sulphur, and perfectly resembling that of Guiria, on the opposite coast of the gulf. Lamellar gypsum is found in many places in the southern division, as also granular, and a bank of grayish earthy sulphate of lime is known on the Brechin Castle estate, ward of Savanetta, within a short distance of Congrejos Bay.

In the county of Victoria, a large tract, viz., the ward of South Naparima, presents a substratum of magnesian marl, on which supervenes a layer, more or less in depth, of the most fertile soil in the world.

Sandstone is also abundant, and is exhibited in the limestone formation, as, for instance, near Port of Spain, at Maraval, Pointe-à-Pierres, Manzanilla, Quemada, &c. Between Guanape and Aripo, at the foot of the mountains, the soil is composed altogether of silicious pebbles, imbedded in a coarse reddish clay. Blocks of milky quartz, and crystals of hyaline quartz, are found in many parts of the mountainous region, and at the bases of the mountains. "However extraordinary this mixture of sandstone and compact limestone may appear," says Baron von Humboldt, "we cannot doubt that these strata belong to one and the same formation."

The slate, or schistose formation, is also extensive and very apparent in the hills forming the vallies of St. Ann and Maraval. Mica slate, talcky, and mica schists, are particularly common; the latter sometimes contains garnets, generally of a small size. The admixture of sandstone, schistose, and limestone rocks, is well marked at Monos; some of the projections are formed of limestone, others of large slabs of schistose rocks; and mica schists are observed in many localities, as also quartz rocks. In our vallies and the beds of rivers rounded pebbles of quartz-stone, some very large, are found, together with a small flat stone of a bluish soft talc; this is particularly apparent after some of those mountain torrents, swollen by heavy rains, have furrowed the neighbouring ridges. The softer rocks, however, soon disintegrate, and the silicious pebbles alone resist the action of atmospheric agents, and thus predominate in the vallies and beds of rivers.

Lignite, and perhaps anthracite, have been found to the westward of the river Moruga, near Erin, and apparently occurs in seams, not only in that locality, but in several places also through-

out the southern division. A substance nearly allied to lignite has also been found at Savanetta; it is compact, and of a dead, dark fracture; it burns with difficulty, and could not be used as fuel, unless mixed with some other substance.

Bitumen, or fossil pitch, another member of the carboniferous system, exists in inexhaustible abundance throughout the whole extent of the southern division. Point la Brea, in the county of St. Patrick, is formed altogether of hardened pitch, which extends into the gulf. The Pitch Lake, near the village of La Brea, in the same locality, is the great natural curiosity of Trinidad, and is really worth visiting. A pond of soft bitumen also exists within the site of the town of San Fernando, and another between Moruga and Guayaguayare; the latter is known by the appellation of "Lagon Bouf," from the peculiar noise produced by the bubbling of the soft bitumen. At Oropuche, Guapa, and Quemada, are likewise small craters of the same substance. About two miles from the Yaro, in the spring of the year, a periodical but brief submarine eruption occurs, throwing up quantities of pitch, with which the beach is afterwards strewn. Many of these bitumen craters exist at the bottom of the gulf, along the line of coast from San Fernando to Trois; their eruptions occasionally agitate the waves, and eject considerable quantities of petroleum. The pitch cast up on the beach is generally in the form of lumps or cakes.

It is to me evident that our pitch deposits must have a submarine communication with those of El Buen Pastor, in the canton of Maturin. "These springs," says Baron von Humboldt, "proceed, probably, from the beds of limestone which form the Brigantine and Cocollar."

Mineral Springs.—Two mineral springs only have been hitherto discovered in the island; one of these is in the valley of Maraccas, at the foot of a high hill, and nearly in the bed of the St. Joseph or Maraccas river; it is a cold spring. According to Dr. T. Davy, "it has a strong smell of sulphuretted hydrogen, and there is a disengagement of gas in bubbles at its surface." From an examination of a portion which he took with him, he found it to contain the following ingredients, viz., "carbonate and sulphate of lime, carbonate of potash, common salt, and traces of silica, and to be impregnated with sulphuretted hydrogen, and that pretty strongly, and with carbonic acid gas: its specific gravity is 1·0016."

The Maraccas spring may be considered as having a rather powerful action on the human frame, since a febrile condition has been invariably produced after a few days' bathing in its waters; such baths, however, have proved very advantageous in several instances, and this spring might be resorted to in many cases of chronic disease.

The other mineral spring is also cold; it has not been analysed by the learned doctor, but Messrs. Crüger and Léotaud, who examined it, found therein the following ingredients to sixteen ounces:—

	Grs.
Muriate of soda	2·349
Sulphate of soda	3·471
Sulphate of lime	6·776
Sulphate of magnesia . . .	6·417
Oxide of iron	6·231

The metallic taste is so strong that it is almost impossible to swallow any quantity of the water: this spring is in the ward of Pointe-à-Pierres, on a small property belonging to M. Desanchos. In the same locality, on the Plaisance estate, are three springs, one nearly cold, another warm, which is used for bathing, and a third unbearably hot. Dr. Davy found that the hot springs were "slightly impregnated with sulphuretted hydrogen and carbonic acid gas, and contained minute quantities of carbonate of potash, lime, and magnesia, and of silica, with a trace of phosphate of lime; so dilute are they, that their specific gravity does not exceed 1·0003." And yet their medicinal virtues, particularly in cases of rheumatism and nervous debility, have been strikingly displayed in more than one case.

Dr. Davy remarks, besides, that the mud volcanoes may be considered as mineral springs:—"The water, muddy as it is, in its ordinary state, from clay suspended in it, when filtered becomes perfectly clear and transparent. A portion so treated, procured from Cedros, was of specific gravity 1·0147, had a faint bituminous smell, and slight pure saline taste. Its chief ingredient was common salt; it contained, besides, a notable proportion of iodine, probably in the form of hydriodate of soda and carbonate of lime. A specimen of muddy water from the mud volcano in the Savannah Grande afforded, on examination, results very similar to the

preceding, seeming to indicate a common source and origin. What is worthy of note in the waters of the mud eruptions," adds the Doctor, "is the presence of iodine, a substance of high medicinal powers. Containing it, they may be deserving of trial, and may prove efficacious in all those ailments in the treatment of which iodine has been found to be beneficial."

Concerning the mineral productions of Trinidad, nothing positive or definite can be said. It is contended that native mercury has been found near Port of Spain, almost within its limits; the fact, however, is very doubtful, and has never been ascertained by any intelligent inquirer. A small quantity of galena, or argentiferous sulphuret of lead, was exhibited a few years ago as the production of the hills to the north of the Santa Cruz valley. The account is this:—"Mr. A. Darmany, a cacao planter of the valley, in the heat of the chase of a deer, came to a place in the hills near the bed of a ravine, when his attention was attracted to some substance of a brilliant aspect; he picked up some of it, which he brought to the Governor, Lord Harris, who had it analysed. It was found to be galena, containing a small proportion of silver. A handsome offer was made to the discoverer if he could point out the locality whereon he had found the precious ore; he therefore went on an exploring excursion, but failed to recognise the spot. Mr. Darmany died a few months after of chronic dysentery, and nothing has been attempted since to ascertain the truth of his report. Iron ore is very common, and large pieces have been found in different parts, viz., at Las Cuevas, and in the *Quebrada de Hierro*, or the Iron Ravine. Specimens of chromate of iron have been exhibited as coming from Point Galfat; sulphate of copper is spoken of as existing at Erin, and sulphur on the Pointe d'Or estate, near La Brea; alum is obtained at Huevos and Chacachacarreo. At St. Joseph, Arima, and Guanape, a beautiful white clay is met with, which is used as a whitewash for houses.

Although sandstone is common, limestone is the only material used for building purposes; it is also extensively burned, near the town, in the preparation of lime, which is regarded as being of excellent quality; brick and pottery earth exist in great abundance.

Dr. Davy, whose opinions may be received as good authority in such matters, has published the following considerations on the geological structure and soils of Trinidad:—

"In its geological structure, Trinidad displays much variety, in accordance with which are its surface and scenery. Great is the contrast between the northern and southern portions of the island, and more especially between its extreme parts, the north-western and the south-western, by which, on one hand, it approaches the bold lofty coasts of Venezuela, and, on the other, the low delta of the Orinoco; the former, the northern and north-western, completely mountainous in character, not unlike Wales, or the lake districts of England, composed of clay, silicious and mica slate, rising to the height of two and three thousand feet above the level of the sea; the latter, the southern and south-western, almost level, or rising only in low hills, and formed chiefly of alluvial matter, sands, and clays, and even mud. Intermediately, the country exhibits more or less of gradation, a hilly region succeeding a mountainous, and, succeeding that, an undulating one, varied with hills and plains, in which limestone and sandstone are the prevailing rocks.

"It has been said that no organic remains have been discovered in the rock formations of this island. This is true, I believe, as regards the slate formation, and the compact limestone approaching to marble in its grain, adjoining the slate; but not so as regards the formation remote from those in the lower hills.

"Schistose rocks, and the transition limestones, are often metalliferous, and probably those of this island are not an exception.

"The soils of the island, also, are very much in accordance with the geological formations on which they rest. Judging from the many specimens, from the different parts of the country, that I have examined, the majority of them may be referred to three kinds:—First, a gravelly loam abounding in silicious matter, containing but little clay, and destitute of carbonate of lime, or nearly so, and consequently not effervescing with an acid. Secondly, a calcareous marl, containing a large proportion of carbonate of lime, with a portion of clay and silicious sand, and more or less of the remains of infusoria, effervescing strongly with an acid. Thirdly, a stiff clay, either altogether without carbonate of lime, or containing only a small portion.

"The first description of soil belongs to the mountainous district, and, I believe, to the Savannahs; the second occurs in the Naparima district; the third, in the southern part of the island; the extent of both these remains to be ascertained.

"It is worthy of remark, that notwithstanding the rich vegetation almost everywhere prevailing, and the excess of forest, none of the soils, not even the forest soils, abound in vegetable matter; tending to prove that the decomposing influence of moisture, and of a high temperature, is sufficient to prevent such accumulation, and more than adequate, at least at the surface, to prevent decaying vegetable matter from passing into the state of peat. It is also worthy of remark, that these soils, in most places, are of great depth, and in consequence the more favourable for productive vegetation."

In the general tenor of these remarks I fully and unreservedly acquiesce; but it will be seen that, as regards the distribution of soils throughout the island, I differ materially from Dr. Davy: and, not to enter into many details, I will only observe that the soils of Morne Calabash and Manzanilla, in the northern division, very much resemble that of Guayaguayare, and even of Naparima, in the southern; whilst the soils of Upper Caroni, Cunapo, parts of Arima and Guanape, in the northern, are closely similar to those of Guapo and Trois, in the southern division.

Soil and Vegetation.—The soil of Trinidad is very various; on the whole, however, it may be rated as generally fertile, and several districts might bear a comparison with the best soils of Cuba and San Domingo, whilst a few tracts bear the characteristics of irretrievable barrenness.

The soils of the island may be classed under three principal heads: clay, loam, and alluvial deposits. Clay and loam predominate in the southern, clay and alluvial in the northern division.

Southern Division.—From La Brea to Cedros, the soil is light, with tracts or veins of clayey land, not very fertile, and requiring manure; it is very deep, contains but little organic matter, and is of a better quality at Cedros and Quemada. When first cleared from its forests, and brought under cultivation, it yields abundant crops of sugar; but as soon as the store of *humus*, or vegetable decompositions accumulated on the surface, is exhausted, the land affords but miserable returns, unless thoroughly manured. I have no doubt that lime and clay marl would, as *dressings*, be excellent means of improvement to this soil, which is, almost everywhere, deep and rather retentive.

The finest loam is met with in Victoria county. It is either of

a brown, a dark, or of a perfectly black colour—the latter of unsurpassed fertility, and particularly adapted to the cultivation of the sugar-cane. Some tracts, in the county of St. Patrick, viz., in the ward of Oropuche, between the lagoon and La Brea, together with some parts of Quemada, are also a rich loam. The soil is loamy and of superior quality in part of Savannah Grande, Moruga, Guayaguayare, Morne Calabash, and Manzanilla. Icacos and Siparia are sandy, but very productive.

Northern Division.—This division is, in general, less fertile than the southern, and exhibits a greater variety of soils. The soil of the vallies and mountains in the county of St. George is good, as also in the *vegas*, or hollows of rivers; that of the vallies and vegas being deposits of very recent formation, and that of the mountains a rich loam,—as proved by the great size of the trees, and the prevalence of balisiers, mountain-cabbage, and cedars.

The plain, extending from the mountains to the river Caroni, may be divided into three sections or belts: a rich deposit along the river, varying from a few hundred feet to a quarter of a mile; a coarse clay; and a poor silicious soil at the foot of the ridge. Clay predominates almost throughout the whole of the division, the soil being of average fertility in the county of Caroni, and in part of those of St. David and St. Andrew. From Arauca to Guanape it becomes unproductive, being a cold reddish clay, or poor silicious soil; whilst from Guanape to La Ceyba it is a retentive whitish clay, or a poor sand supporting a languishing vegetation of ferns, sclerias, cocorits, bromelias, and dwarf-trees. The whole of this tract may be regarded as the worst land in the colony, and not worth the labour of cultivation. On the banks of the Oropuche and Matura the land is excellent; a tract between Oropuche and Manzanilla, known as the *Casatal*, is equal to any in the colony. The land along the Cumuto and Tumpuna is very productive, particularly on approaching the hills. Chaguanas, Carapichaima, and Couva, are generally a light loam, but rather damp, in consequence of their low situation.

The surface of the country may be characterised as an interchange of flat, undulating, and hilly. The whole tract of flat land is, in general, clayey and retentive; in some parts, consisting of a layer of light sandy soil on a substratum of coarse clay,—such as part of Tacarigua, Caroni, Chaguanas, &c.—and

being of average fertility; in others, it is a reddish or whitish clay, without even traces of organic matters, whilst the entire surface is, as it were, eroded, forming in close proximity holes of five or eight feet in diameter, and of a depth varying from about six to twelve inches; this remarkable disposition is well illustrated between Guanape and Aripo.

Undulating lands are, without an exception, the richest and most fertile in the colony,—as exemplified in Naparima, Oropuche, Manzanilla, Mayaro, &c.; the soil is, generally, a rich loam, several feet deep, and of a dark brown or black colour. The hilly parts are also very productive, being loamy surfaces resting on schists, or on limestone, which sometimes protrudes in large blocks. Where, however, mountains terminate on a plain, the zone skirting the same is commonly stony, and of little fertility. This characteristic is well defined all along the northern range; from Port of Spain eastward the summits are, generally, productive.

The vegetation of wild plants furnishes a good criterion whereby to judge of the various degrees of fertility or barrenness of soils. The single family of palms affords sufficiently accurate indications of the quality of the land and of its adaptability, or otherwise, to the growth of our various staples: as instances—the Carat is indicative of the best soil, and of its suitableness for the production of sugar; the Mountain-cabbage is a sure characteristic of good land, adapted to the cultivation of cacao and coffee; the *Attalea speciosa* of a light rich loam, particularly well suited to the production of "ground-provisions;" the Groo-groo, on the other hand, grows in dry silicious lands; the Timite generally in low sandy tracts; the Cocorite and Palma Real in the worst soils. Any land producing the Carat (*Copernicia*) and Mountain-cabbage (*Orcodona*), Palms, the wild Fig-tree (*Ficus*), wild Plum-tree (*Spondias*), the Cedar (*Cedrela*), Balizier (*Heliconia*), Sand-box tree (*Hura*), &c., may be pronounced good. Wherever these plants grow in abundance, the soil is very fertile; the Carat, wild Fig-tree, and Cedar, however, are particularly characteristic of superior lands. The soil is of excellent quality where the Fig-tree, Mountain-cabbage, Plum-tree, Cedar, and Balisiers, are plentiful; it may also be considered good whenever any one of the above species is not wanting. On the contrary, wherever the Cocorite, Manaco, Timite, and Groo-groo (Palms),

the Mulatto-tree (Cassia), Bois-sang (*Vismia*), the Fox-tail grass, Cortaderas (*Scleria*), Caratas, Pine-apple, and Melastomaceous plants grow in abundance, the soil may be pronounced poor and unproductive. The Poui (*Tecoma*), Balata (*Achras*), Carapa, or *Crapaud* (*Carapa*), and Guatecaro (*Lecythis*), thrive both in good and bad lands; the two former, however, arrive at superior growth in poor sandy soils, the two latter in damp clay-lands.

There exist, in different parts of the island, what we term *natural* savannahs to distinguish them from the artificial savannahs, or pasture-grounds laid out for stock. These savannahs are, generally, tracts of land skirted by forests, covered with a rank vegetation of coarse Graminaceæ, Cyperoids, and others plants, and studded with stunted dwarf-trees. Some of them are situated on the flanks and summits of the mountains, others in the low lands. The former may be seen in the northern range, from St. Joseph to Arima; and, though their soil is silicious and very poor, they may, nevertheless, be said to be damp. They are dotted over with large blocks of milky quartz, which, from a distance, appear as so many white cattle grazing in the pasture. The low-land savannahs are met with in various parts, and may be classed under three heads, according to the quality of the soil; this is either a coarse unproductive clay with a layer of white sand, a rich sandy loam, or a poor light soil. The savannahs of Arouca and Piarco in the ward of Arouca; of Piarquito, Arima, and O'Mara, in the ward of Arima; that of Aripo, on the right bank of the river Aripo; and the Caroni, or Grand Savannah, are good specimens of the first class of soil. Those of Icacos and the Cocal come under the second head: they produce an abundance of Guinea grass, and of another *panicum* called Carice. The savannahs of Couva, Savanetta, and Erin, are intermediate between the clayey and light loamy varieties. The low-land savannahs being flat, are damp and very subject to become miry and swampy under the prevalence of the periodical rains; whilst during the dry season, from the withdrawal of moisture through the excessive heat, they are indurated and everywhere rent into regular ruts or chasms of several feet in depth. This is well illustrated in the Grand Savannah above mentioned. It is customary to fire these miniature-prairies during the dry season in order to destroy the rank vegetation which had sprung up during the rains, and thereby induce a fresh and tender growth for the benefit of the

stock which is sent (these savannahs being public pasture-lands) to graze therein. On these occasions the rush of animals and game of all kinds which had been sheltered for months under cover of the long-tufted grass is astonishing. Some are shot, or cut down by the watchers around the fire, and others caught by dogs; many make their escape, and a still greater number are afterwards found either stifled by the smoke, or consumed almost to cinders in the flames.

The vegetation of Trinidad, like that of all intertropical climates, is dense and luxuriant. Some trees attain the loftiest heights, and display the most majestic forms. In the palm family, the Moriche (*Mauritia*) and Mountain-cabbage (*Oreodoxa*) grow perfectly straight like columns, supporting a tuft of fan-like and pinnated leaves: over its humble associates towers the giant Cedar, whilst the noble Balata rears its magnificent trunk, expanding above in vigorous branches clothed with a dark green foliage. The Poui and Bois Immortel periodically change their verdant foliage,—the former for a thick covering of pure yellow, the latter of brilliant crimson blossoms; and, in like manner also, the flowering Roble assumes its orange-coloured garment, and spreads far around a delicious perfume. The Ceyba, the Sand-box and wild Plum-trees display, on their branches and along their trunks, a thick vegetation of Epidendra and Tillandsias. The underbrush, in some parts, is so thick that a passage must be effected with the cutlass. Bauhinias, Bignonias, and other lianes, are everywhere seen climbing up the trunks of the loftiest trees, whilst, from the branches of others, depend the twining roots of the Mamure (*Carludovicia*) and the Seguine (*Philodendrum*). The vigorous Matapalo (*Ficus*), accidentally implanted on some tree, sends down into the soil its cable-like root, meanwhile encircling its supporter with an inextricable network of pliant root-stems, which, by a gradual yet rapid growth, eventually stifle and destroy the most luxuriant tree. In copses are met the more humble individuals of the vegetable kingdom—the beautiful Passiflora, the delicate Convolvulus, the more robust Bignonia, and the useful Guaco and Pareira Brava. Poisonous as well as wholesome medicinal plants grow everywhere; and from our forests we may draw an almost inexhaustible supply of valuable timber, as well as cabinet and other woods, applicable o all descriptions of useful purposes.

The culture of only a few of our indigenous vegetables has, as yet, been attempted, though many more might perhaps be cultivated to advantage. Those, however, which—whether indigenous or exotic—form the basis of our agriculture, exhibit the same luxuriance of growth as characterises the spontaneous vegetation of the island.

The sugar-cane, when cultivated in virgin and congenial soils, displays a vigour such as to call forth the admiration even of the casual observer, and how much more to elate the prospective hopes of the interested planter. The cacao-tree reaches, in our *vegas*, the height of thirty feet, and yields a successive produce throughout the year; the coffee, as well as the cotton and castor-oil plants, attains the proportion of copse-wood; rice grows to the height of six and seven, maize to that of eighteen, and even twenty feet; the farinaceous roots of the Manioc, and the tubercles of the Yam, mature, in proper localities, to enormous sizes; plaintains furnish, with but little trouble, an abundance of alimentary provision, whilst in rich sandy loams, pumpkins and water-melons are reproduced on the same spot, for years, without the slightest care. Fruit-trees, when planted, are usually left to their own untended growth and development, unaided even by the pruning knife; but they fail not, in due season, to pour forth the exuberance of their luscious treasures; the nutmeg and cinnamon trees also grow to the fullest perfection. Yet man—neglectful man—satisfied with Nature's proceedings, attempts but feebly to turn to advantage the gratuities of a bountiful Providence.

Earthquakes.—Although there exists no authentic record of Trinidad having ever suffered to any great extent from earthquakes, yet the island is not unfrequently visited by those subterranean convulsions; and a year seldom passes away without the recurrence of one or more of such visitations. They were rather numerous during the prevalence of the long and severe drought of the year 1846, when as many as seven shocks were felt in the month of September alone. In October, 1761, the island suffered from a rather severe earthquake, and the mountain to the N.E. of St. Joseph, known by the name of "Cerro de Don Pedro Indio," was rent to a large extent, the fissure or chasm remaining open for a long period. For many years, and until lately, a mass in honour of "Nuestra Señora de la Guadalupe" was celebrated in

St. Joseph on the date, and in commemoration, of that event. In September, 1825, the steeple of Trinity Church was thrown down, and the walls of several houses in Port of Spain were dangerously cracked during one of the severest shocks within the memory of the inhabitants.

It has been remarked that earthquakes are more prevalent during the hottest months, namely, in August, September, and October. Their movement is either from S.S.W. to N.N.E., or from E. to W., that is to say, in the direction of the Antillan range, or the Grand Cordillera of Venezuela.

CHAPTER III.

NATURAL HISTORY—VEGETABLE KINGDOM, TIMBER WOODS, USEFUL AND POISONOUS PLANTS—ANIMAL KINGDOM, MAMMIFERS, BIRDS, REPTILES, FISH AND INSECTS, VIZ., THOSE WHICH MERIT ATTENTION FROM THEIR UTILITY AS FOOD, THEIR SINGULAR HABITS, OR NOXIOUS AND DESTRUCTIVE PROPENSITIES.

THE all-bountiful Creator has everywhere made an abundant provision for the wants of his creatures; and whithersoever man directs his steps in search of a home, he is certain to find food for his sustenance, materials for his clothing and lodging, as also products naturally suited, or artificially adaptable, to commercial purposes. Yet, wherever civilised man migrates and settles, he carries with him, as a matter of necessity, not only those implements and conveniences which an advanced state of civilisation has invented, but likewise those animals he has domesticated, those plants or seeds he has reclaimed from nature, and which, he knows, will be useful in contributing either to his support or comfort. Thus, the ox, the horse, the sheep, swine, and poultry, were introduced and naturalised in the West Indies; and the sugar-cane, coffee, rice, and other growths, imported and propagated into staples. But in these islands were also found building materials, as well as articles of food and commerce. I have, in the preceding chapter, mentioned the mineral productions which may be, or are already, turned to useful purposes; I shall hereafter fully notice those which the vegetable kingdom supplies for trade and general aliment; but at present I only wish to point out those indigenous plants and animals which have been rendered subservient to our wants, together with those of the former which desire peculiar mention on account of their noxious or curative properties; and those of the latter which merit attention, either from their singular habits, or destructive propensities and venomous attributes.

VEGETABLE KINGDOM.—Under this division, such plants only will form the objects of notice, as serve for building purposes, cabinet-work, &c.; for medicinal purposes, or such as are to be avoided on account of their deleterious properties.

Balata (*Mimusops*). The Balata, or Bullet-wood, is one of our best and most useful timbers. Though a hard wood, Balata is not, however, iron-hard as are the Poui and a few others: owing to its regularity of grain and freedom from knots, it is easily sawn, and still more so split; and workmen, in general, prefer working it to many others of even less solidity. It is excellent in many respects, but mainly as house-posts, and plates, joists or floor-beams and runners, as also for fence-posts, spokes, and even shingles—the latter remarkably durable. The Balata grows to very large sizes, some measuring five and six feet in diameter, whilst the unbranched shaft often rises from fifty to sixty feet.

Poui (*Tecoma*). There are three varieties of the Poui, characterised by the colour chiefly, viz.: the white, the green, and the black Poui; of these the green is accounted the superior quality. Poui is, unquestionably, our hardest timber, and the Swedish axe alone is fully equal to the task of felling it; it also contains a sort of gummo-resinous substance which, particularly in the black kind, impedes the free action of the saw. The usages to which Poui is applicable are not so numerous as those of Balata; it is mainly employed for ground-posts and other beams in heavy buildings, and is, for such purposes, considered by many as superior to the former: though growing to large sizes, it never attains the proportions of the Balata.

Acoma, or Mastic (*Achras*). Between this wood and the Balata there exists the greatest analogy, with the exception of colour—the former being of a light straw, whilst the latter is of a dark red tinge: it possesses a very fine and close, but also a very hard grain, and may be said to combine the qualities of the two foregoing timbers. It is adapted to almost all purposes, even to the handling and boxing of carpenters' tools, and is, in these respects, perhaps our most available timber. It thrives, generally, in mountainous districts, and attains large dimensions.

Yoke. Very common, and an excellent wood—not so hard and heavy as the preceding ones, but equally durable. It is applicable to all building purposes, and can also be wrought into handsome furniture; its colour is not so dark as that of the mahogany, but is, perhaps, more beautifully variegated. Yoke may be said to be imperishable in the ground: it grows to a large size.

Bois-lézard, Fidèle, or, by corruption, Fiddle-wood (*Vitex capitata*). This again is an excellent wood, neither too heavy nor too

hard, and is employed only for building purposes, as ground and house posts, plates, joists, rafters, &c. It grows ordinarily to about twelve or eighteen inches, but often much more in diameter; when large, however, it is commonly found to be hollow within.

Epineux Jaune (Yellow Sanders)—which ought not to be confounded with Epineux Blanc—bears a very close resemblance to the Acoma, and is available for the same purposes: it is also valuable to the wheelwright. Diameter, from twenty-four to thirty inches.

Guatacare (*Lecythis Idatimon*). Very common in damp clay lands, is of intricate grain, very tough, and is available for house-posts, joists, rafters, and even ground-posts; though in the latter it is apt to rot at the surface-line of the earth, especially in damp soils. It is, however, particularly in use for cart-shafts, and generally wherever the quality of toughness is required. Diameter, from two to three feet.

Savonette Jaune (*Sapindus*). Though not used as extensively perhaps as it ought to be, the Savonette Jaune is undoubtedly one of our best woods: it is tough, grows to pretty good sizes, and might be employed in all house constructions, as posts, beams, rafters, &c.: its qualities also fit it for felloes and mill-frames: it is very common.

Red Mangrove (*Rhizophora*). This wood, though not equal to any of the former, is nevertheless used for building purposes, and chiefly for beams and joists: it enters into the construction of many houses in Port of Spain. The same remark is applicable to the Bois-rouge and Contre-vent: the latter may be said to be peculiar to the northern mountains, and is of large size; the two former belong to salt swamps and low lands: they are generally warped in growth.

Fustic, or Bois d'Orange (*Broussonetia tinctoria*), is well known as a dye-wood, and is besides an excellent timber. It lasts a very long time in the ground, but unfortunately does not grow to any very large size, which is an obstacle to its being in more extensive demand: it is, however, invaluable to the wheelwright for naves and felloes, and I have no doubt fine furniture might also be wrought from it. Though in some parts rare, it would appear to be in great abundance all along the southern coast, and in the interior of some of the south-eastern districts.

Angelim (*Andira*). There exist here at least two different

species of Angelim, growing almost everywhere, and of which one is less in bulk than the other : the former furnishes very superior cart-naves ; and the larger species, when sawn into boards and planks, makes excellent flooring : it is also valuable for mill-frames.

Tapana grows to a very large size, and is well suited to all building purposes : it is a strong tough wood, and may be sawn into boards for flooring and boat-building ; it is, however, chiefly used by wheelwrights for felloes.

Roble (*Papilionaceæ sp.*). The Roble grows in great abundance in some parts of the country, and commonly in good soils, where it attains large dimensions. Though not in very extensive use, it is yet an excellent timber—of a dark orange colour, not over hard, and easily sawn into boards and scantling ; it can be employed in almost any erection, and furnishes remarkably good and lasting ground-posts. It possesses, when newly wrought, a very agreeable odour, which it preserves indefinitely, and is of sufficiently fine grain and polish to serve for furniture ; in fact, where Locust is scarce, the Roble is used as a very efficient substitute.

Carapa, or, by corruption, Crapaud (*Carapa Guianensis*). Besides the oil which is extracted from the seeds of the Carapa, the tree itself supplies excellent timber. There are two distinct varieties, both may be sawn into scantling, boards, and planks ; they are also split into shingles and staves. The Carapa is very extensively used as beams and rafters, and the lighter coloured species, when well polished, makes fine furniture. Diameter, from two to three feet.

Capivi (*Copaifera balsamifera*) very much resembles the European walnut, and may be applied to the same uses, but is not, perhaps, as much employed as it ought to be. It is an excellent timber, of very large large size, and may serve the purposes of the builder, wheelwright, turner, and cabinet-maker.

Locust, or Courbaril (*Hymenæa Courbaril*). This is one of our most valuable woods, and might be used for all building purposes, but mainly in ornamental work ; it is, however, almost exclusively used for furniture,—such as presses, bedsteads, side-boards, tables, &c., and by wheelrights for carriage naves. Diameter, five to six feet, and very lofty.

Purple-heart, or Sapatero (*Copaifera pubiflora*). The Purple-heart is an excellent timber, and may serve in building as beams and rafters ; but, from its rich dark colour, it is especially used

by cabinet-makers for facings and other ornamentation in the choicer kinds of furniture. The Heart-wood is as hard as the Poui itself, whilst the sap, or outer wood, is of a light colour, rather soft, and not durable.

Mora (*Mora excelsa*). The Mora and Mangrove may be said to be our only *social* trees, and the former is, perhaps, the most abundant of all our timber woods. It is one of the loftiest and largest inhabitants of our forests, but when of any large proportions, is in general hollow, or, at least, unsound in the centre. The Mora has never been much employed, and is not, therefore, in great demand. It is objected that it does not last in the ground beyond three or four years, and on that account has not hitherto been ranked among the valuable timbers. If not recommendable, however, for ground-posts, it is certainly available in many other respects, and being almost imperishable in water, would be found of special excellence in ship-building. I have no doubt, from the above quality, it would also answer well for the flooring of stables, and in the construction of bridges. One of our Mora forests is now being felled (by order of his Excellency the Governor), and the timber brought into notice; and, as the wood is made to serve all kinds of purposes, before many years have elapsed the public will have had an opportunity of judging of the quality of the timber. The Mora is not a hard wood, but very much resembles the Angelim both in colour and grain.

Cedar, or Acajou (*Cedrela odorata*). For all building purposes, except ground posts, Cedar is, unquestionably, our most valuable wood. It is light, easily wrought, and yet very lasting; also, from its pungent odour and acrid taste, it is generally exempt from the attacks of insects. Cedar is commonly sawn into boards and scantling, and used for plates and rafters, flooring and wainscoting, inside fittings and outside boarding; for panel-doors and windows, mouldings, and most of the ornamental parts of buildings; it is also split into light, but durable shingles, and wrought up into ordinary furniture. The side-roots or spurs, springing from the trunk, are finely grained, and sometimes richly knotted and variegated—so much so, in fact, as to furnish beautiful slabs, hardly inferior in appearance to mahogany, and which are wrought into the most elegant furniture. It is particularly durable in water, and may be used in boat-building;

handsome and valuable canoes are also hollowed from the largest specimens. Cedar thrives in the best soils, and is pretty abundant throughout the island. Diameter, five to ten feet, and in height, perhaps the loftiest of our trees.

Cyp (*Cordia Gerascanthus*). The Cyp is not so light as the Cedar, nor is it so variously employed; it is, however, extensively used for rafters and flooring boards, and is, with reason, regarded as one of our best woods; it generally grows in the mountainous districts, and does not attain very large proportions.

Laurier, or Laurel, Cyp.—The Laurier Cyp grows only in the mountain districts; it does not last in the ground, but may be sawn into boards and scantlings: it is light and very durable—in fact quite equal to the Cyp itself. Diameter, from two to three feet, lofty, and as straight as a palm tree.

Olivier (*Bucida*) generally thrives in poor land, and is plentiful between Arauca and Aripo, as also at Guapo and Irvis: it is not so valuable as the Laurier-cyp, but can be used for the same purposes—though rather heavy, and with a great tendency to rive. The Olivier grows to a large size, but is then invariably hollow; it is most available when of only twenty-four to thirty-six inches in diameter.

Couroucay or Incense-tree (*Amyris ?*). Scarce, but valuable for building purposes, besides the sum or gum-resin it contains in great abundance; so are also the Bois-tan or Surette (*Byrsonima spicata*), and the Bois-sang or Blood-wood (*Vismia*); they never attain a very large size, but may be used for rafters.

Aguatapana (*Rhopala montana*). An excellent timber, growing in the mountains, but never reaching a large bulk: it resembles rose-wood, and might be turned to useful purposes by the cabinet-maker.

Gasparil (*Esenbeckia*). Very tough and lasting, and bearing the closest resemblance to box-wood, but, like it, unfortunately of small size; when large enough, it is used for posts in house-building.

Yoke-savanne (*Mimosa*). Very valuable to the wheelwright.

Calabash (*Crescentia Cujete*). Light and very tough; excellent in boat-building—particularly as ribs—and in the framework of agricultural implements; useful also to coachmakers.

Tendre Acajou (*Mimosa*). A soft, and yet very durable wood, adapted to all building purposes.

Maussara, or Bread-nut (*Artocarpus incisa*, var. *Mucifera*). Its seeds are eatable, much resembling the chestnut, when roasted; and the wood is excellent, both for furniture and building: it attains large dimensions, and is pretty abundant.

Galba (*Colophyllum*) is one of our finest forest trees, and when of large size, is principally used for the fabric of canoes; though it may also be sawn into scantling, boards, and planks, and is then applicable to all sorts of constructions. It, however, contains a sort of gum-resin, which materially impedes the free action of the saw. When set in rows, the Galba grows thick, and forms excellent hedge fences, which are easily kept down by periodical prunings.

Sand-box Tree (*Hura crepitans*). The Sand-box tree matures to proportions equal to those of the Ceyba and Cedar: it thrives in the best soils, and near the sea-shore. This wood is only used, as far as I am aware, for canoe-hulls, which are hollowed out according to the dimensions of the trunk or block; but, as it is light and durable, it might also be rendered serviceable in other respects. The Mora, Cedar, Galba, and Sand-box are possessed, in all probability, of the qualities required in ship-building, and, on this account alone, may be reckoned as very valuable.

Manchineel (*Hippomane Mancinella*). It is well known that the Manchineel-tree is a deadly poison: it would also appear to preserve its poisonous qualities for an indefinite period. I know of an instance in which a planter having found, lying on the beach, a Manchineel tree which, from all appearances, had been there for years, thought he should be able to make it of service in some way or other; but he was soon obliged to desist. The Manchineel wood is, otherwise, a valuable timber, and might be used in building and ornamental works.

Besides the hitherto enumerated forest trees, there are others which are, or might be, turned to advantage. From the Moricyp, Genipa, Moripa, Caracoli, and Pois-doux (*Inga fœculifera*), also from the Land-grape, Carapa, and even Cedar, are prepared excellent staves; the latter, however, ought to be discarded in this respect on account of its bitter taste and discolouring properties. The Mirobolant (*Hernandia*), Chestnut-tree (*Carolinea*), Mombin or Wild Plum (*Spondias*), and other soft woods, supply good, cheap, and easily procured headings for hogsheads.

Many other plants are similarly brought into practical and

every-day utility, and among them several palms. When arrived at full maturity, the Carat (*Copernicia*) makes as good ground-posts as any hard wood: its leaves, as also those of the Timite (*Manicaria saccifera*) and Cocorite, supply a cheap and durable thatch—the two former especially—and are extensively used whenever procurable. It is observable, however, that they are rarely found together in the same parts; and according to their respective prevalence, is the distinctive covering of cottage roofs to be known. The Mountain-cabbage, the Manaco, Groo-groo, Palma Real, and Cocorite, are split into rounded boards, which are employed by the poor for the outer boarding and even flooring of their cottages, and may also be used for inclosing poultry houses and yards, sheep-folds, stable-boarding, &c.: they are cheaper and more durable than White Pine boards. *Cortaderas*, or Sword Grass, Cane-tapes, and Fox-tail grass are also used in thatching.

The black and white Roseau (*Bactris* and *Gynerium*) are made use of as laths for the laying on for thatch; the former also in wattling or forming the framework of *tapia*—a species of very coarse stucco made of grass and clay—whilst the leafy top of the latter, though not so generally employed as it might be, supplies a most excellent thatch-covering, being thick and very durable. The Bamboo (*Nastus Borbonicus*) is extensively used as fuel in lieu of mogass, in those districts where it is plentiful; for that purpose, it is cut about four feet long, and then split or bruised, to allow a free escape of the air contained in the internodes, lest its expansion should occasion explosions, and thereby damage the furnaces and flues. The Bamboo is also employed as plantings for quickset hedges, and as rods for temporary fences; in the latter by being attached to the posts with some pliant lianes or withes: baskets and fish-nets are commonly made from the stem of this plant, in which branch of industry the Chinese immigrants excel. Its foliage supplies a rich fodder. A vine-like palm (*Desmoncus*) is employed for securing the rods in field-fencing, and might also serve in the manufacture of baskets: the Carib basket—water-tight when well woven—is made of a species of Calathea-Ahoman, or Aruma. The fact is, it is a sort of double basket, the leaves of the Cachibou (*Calathea*) being inserted between two coatings of wicker-work. With the twiny roots of the Seguine (*Philodendrum*) are made neat hand-baskets; and the Mamure, split into small strips, serves the pur-

pose of binding the leaves of the Carat and Timite-thatch to the Roseau laths.

From two plants of the genera *Bauhinia* and *Brownea*, viz., *Pata de Vaca* and *Palo-Rosa*, superior hoops have been obtained; and I have no doubt some of our Bignonias, and the indigenous or prickly Bamboo (*Bambusa*), might answer a similar purpose.

The Bois Immortel (*Erythrina*) is invaluable as affording shade and protection to the Cacao, on which account it has been called by the Spaniards "Madre del Cacao," "Mother of the Cacao." There are two species of the *Erythrina*, the *coccinea*, or *Anauco;* and the *umbrosa*, or *Bucare*. The former is a very soft, light wood, rather brittle, and perfectly useless as timber or fuel; the latter is not exactly so soft or brittle: they are propagated by slips or cuttings.

The family of Graminaceæ furnishes excellent fodder, and various species from the genera *Paspalum* (Herbe-lancette), so called from the form of its leaves, which resemble the blade of a lancet. *Panicum* (Herbe-fine), *Andropogon* (Couch-grass), *Cynodon* (Bahama-grass), *Oplismenus*, *Pennisetum*, &c., form, in a great measure, the basis of our pasture-grounds. The Guinea-grass, Bamboo, Guinea-corn, and Job's tears, are excellent fodder for all sorts of cattle; cows thrive well on the Cow-grass (*Alternanthera*), and the Liane-douce (*Convolvulus*)—the latter eagerly sought by swine; to which may be added the Herbe-grasse (*Commelyna vulgaris*), and several plants of the Amarantaceæ family.

From the fibres of the Mahoc (*Sterculia*), Carata (*Bromelia carata*), and Agave are made excellent ropes; and I have no doubt very useful textile fibres would be procured from various Apocynaceæ and Asclepiadaceæ, among others, from the *Asclepias Curassavica*, and also from the Balais, or Broom-plant (*Sida*), and the Mallow (*Malachra*); they should be thickly sown in a good soil, so as to prevent their growth into branches.

Many of our plants are of a poisonous nature, whilst others furnish useful medicinal matters: of those belonging to these two classes, I have but a limited knowledge.

Poisonous Plants.—The Brinvilliers, or Pink-root (*Spigelia anthelmintica*), is a small plant, very common, and generally growing in newly-cleared lands: it is fatal to animals as well as man; and yet it is a powerful vermifuge, when administered with caution:

the *Yongui*, or Stramony, and several other *Daturas*, are strong narcotics. The seeds of several *Euphorbiaceæ*, viz., of the Croton, Sand-box tree, and the Medicinier or Physic-nut (*Iatropha Curcas*) are violent emeto-cathartics: the fruit of the Manchineel, and the roots of the Manioc (*Iatropha Manihot*) are acrid and stupefactive poisons. A species of Seguine (*Caladium seguinum*, vulg., the *Devil Seguine*), which grows in damp places, is strongly caustic, and, wherever applied, causes a violent inflammation, and even ulcers difficult of cure. Several *Apocyna*, *Asclepias*, and *Bryonies* are poisonous emeto-cathartics; the *Hamelia*, as well as the bulbs of a few Amaryllides, are also poisons.

The catalogue of useful medicinal plants is, nevetherless, much larger than the above. Among emollients may be numbered the following: Herbe-grasse, Prickly-pear (*Tuna*), and the mucilaginous part of the common Aloe; the buds, flowers, and young fruits of the Ochro (*Hibiscus esculentus*), the leaves of the Gigirec (*Sesamum Orientale*) the *liber*, or inner bark of the Bois d'Orme (*Guazuma ulmifolia*), the Balais-doux (*Scaparia dulcis*), the flowers and roots of our Mallow, the young pods of the Cacao: as external applications, the Aloe, Prickly-pear, and Ochro, the young leaves of the Medicinier, Cocoa-nut oil, and Cacao-fat, Manive, Corn-meal, and Rice, in the preparation of emollient poultices.

Lime and sour Orange juices, as also the fruit and young leaves of the Tamarind, serve to prepare very agreeable lemonade; the liquor of the Cocoa-nut is likewise a pleasant and refreshing drink.

The Canne-de-rivière, or River-cane (*Castus*), Herbe-couresse, or wild Cress (*Peperomia*), Couch-grass, and the flowers and roots of a few amarantaceous herbs are excellent diuretics.

The Lemon-grass (*Andropogon Schœnanthus*), Guérit-tout (*Pluchea*), Chardon-bénit (*Eryngium fœtidum*), Cariaquite (*Lantana*), and warm lemonade, may be regarded as excellent diaphoretics.

The Herbe-à-charpentiers, or Carpenter's Grass (*Justicia pectoralis*), several species of ferns, known here by the name of Capillaire (*Adiantum*), and Hart's Tongue (*Scolopendrium*), the Dorstenia, Ceriman (*Monstera*), the bud of the Trumpet-tree (*Cecropia peltata*), and Macornette (*Borreria suaveolens*), the flowers of the Pigeon-pea and Pumpkin, as also a syrup prepared from the Calabash and the pod of a species of Cassia, are used as pectorals.

The following are regarded as excellent astringents, viz., the

inner bark of the wild Plum, Cashew, Cachiman (*Anona reticulata*), and Mangrove, the green fruit of the Guava (*Psidium*), the buds and leaves of the Guava, Trumpet-wood, Pigeon-pea, and the flowers of the Paulo-rosa, the sap of the Blood-wood (*Croton gossypifolium*) and the Liane-tasajo (*Bauhinia*). The Belle-de-nuit (*Mirabilis Talapa*) applied in a bruised state, in cases of sprains, has a powerful healing action. To the above may be added, as excellent vulneraries, the Herbe-à-charpentiers, the Aloe, Herbe-à-pino (*Eupatorium*), *Hebeclinium macrophyllum*, and a Tussiena, which grows in great abundance in all damp localities. These are also used, together with the pulp of the Tamarind and sour Orange, the Agave, the Pied-poule (*Eleusine Indica*) and even the leaves of the Sand-box tree, as effective abstergents.

The following are good hydragogues, viz.: the juice of the Banana tree and the decoction made of its bulbs, the bark of the Petit Branda (*Chiococea racemosa*), also a bryony, which is rather irritating, and the coffee prepared with the parched seeds of the Stinking-weed (*Cassia Occidentalis*).

The leaves of the Sour-sop (*Anona muricata*) and other Anonæ, I regard as valuable antispasmodics, and far superior to the lime flowers. As emmenagogues, the syrup made from the Carata and green Pine-apples, the roots of several Aristolochiaceæ, and of the stinking-weed, are accounted excellent: the Pap-bark, or Paque (*Thysalis*), I consider as highly recommendable in the cure of Leucorrhœa.

In dysentery, the following are extensively used as astringents: the *liber* of the Cashew, wild Plum, and Mangrove; green Guavas and Liane Tasago; as sedatives and emollients, Lemonade, the Cashew-apple and Mango, the Prickly-pear, Aloe, Balais-doux, Bois d'Orme, and, almost as a specific, the Toco (*Cratœva Tapia*); from the berries of the Hamelia also is prepared a syrup of excellent effect.

The Bitter-ash (*Quassia amara*), Herbe-équilles (*Rolandra argentea*), Herbe-à-pique (*Caleahobata*), Grand Trèfle (*Aristolochia*), Truta de burro (*Uvaria*), Quinquina-pays (*Portlandia hexandria*) are good febrifuges. To these may be added, as excellent stomachics, and very valuable in cases of indigestion, the Secua or Nhandiroba (*Feuillea scandens*), and the Guaco (*Mikania Guaco*); as also the leaves of the Aguacate, or Avocado, and Aya-pona, and the seeds of the Guatamare (*Myrospermum*).

The Brinvilliers, and the inner bark of the Angelim (*Andira inermis*), are powerful, but rather dangerous anthelmintics, as they have a strong stupefactive action on the brain. The Worm-bush (*Chenopodium ambrosioides*), and the Liane-à-l'ail (*Bignonia alliacea*), are excellent and safe vermifuges. Some persons are prejudiced against the administering of the Cow-hage (*Mucuna*) as an anthelmintic: I have, however, prescribed it on several occasions, not only without the slightest ill effect or inconvenience, but with remarkable success. I even urged it as the best remedy against Lumbrici. It ought to be given either in thick syrup, in honey, or well enveloped in some soft substance.

The action and uses of Balsam Capivi are too well known to require any comment: the Liane-paques (*Securidaca*), Lignum-vitæ, and the roots of the Agave, are administered as anti-venereals; and I have invariably found the root Pareira-brava (*Cissampelos*) valuable in chronic inflammation of the urinary organs.

Some of the above plants, viz., the Guaco, Secua, Grand-tréfle, as also the musk Ochro (*Hibiscus Abelmoschus*), and the roots of the Manaco, are regarded as excellent antidotes to the bite of serpents and venomous insects, such as scorpions, spiders, and centipedes. They are generally given in some spirit; but, under pressure of necessity, they may be bruised, and the simple juice taken—as in the case of the Guaco and Manaco—the residuum being applied to the wound; or the seeds can be masticated and swallowed, as is practised with the Musk-ochro and Secua. There are, in addition to those already mentioned, many other plants successfully employed in like circumstances; even Lime-juice, both internally and externally, is highly beneficial.

The juice of the root of Yuquilla is an excellent remedy for the cure of chronic ophthalmia; but when used in the acute stage, increases the inflammation: it is the *Bignonia ophthalmica* of Dr. Chisholm. Carapa-oil used in friction is an infallible cure for ticks.

The indigenous trees and plants hitherto enumerated, and of which I now close the catalogue, are those which are ordinarily used in building, in mill, wheel, and cabinet works, as also for medicinal and other purposes. Some of them are met with almost everywhere, and in great abundance; others, as I have

already stated, are scarce, and thrive only in certain localities. The Mora and Mangrove, as also the Timite, Carat, and Sword-grass are perhaps the only indigenous plants which grow gregariously: the Cedar thrives in the best lands, whether level or mountainous; the Guatacare and Carapa in damp clay soils; the Cyp and Laurier-cyp in the mountain districts.

Durability is the main characteristic of nearly all our timber-woods: a few only are light and soft, the generality solid and heavy; the hardest of all is the Poui, as also the heaviest. These qualities of extreme solidity and weight are, to a certain extent, a defect; because they exact a larger amount of labour to render the timbers marketable, or even render them unfit for indiscriminate use in ordinary buildings, and for certain purposes in many constructions, such as the lighter roof-work.

Generally speaking, popular opinion and practice do not distinguish or prescribe any fitness or unfitness of seasons for the felling of timber trees: this I pronounce to be a very serious error. In Europe and other temperate climates, trees are felled in autumn, when the sap is deficient or dormant. It cannot be said that such a season really prevails in tropical regions: there is, however, a period during which vegetative life in general may be said to be at a minimum, particularly in certain trees: the cedar, for instance, remains for several months completely denuded, and the poui and roble lose their foliage immediately before flowering. After the dry season has set in, the vegetation becomes everywhere more or less languid, for the space of two months, or two months and a half, thus showing a deficiency of sap in its organs: this period commonly embraces a part of February, the months of March and April, with part of May, but is more or less extended, according as the dry season itself is more or less protracted. This is the proper time, in fact the only season in which trees can advantageously be felled for industrial purposes. Any wood thrown down during the rainy season, but especially during June, July, and August, when there is a renewed vigour in the vegetation, becomes liable to rot, or to the ravages of insects, viz., the termite or white ant, and the mite.

There exists a popular opinion that the phases of the moon exercise a marked influence on the durability, if not of the harder timber, at least of the softer wood and thatch covering. According to that opinion, wood cut during the *crescent* of the moon

does not last so long, and becomes liable to the attacks of insects and the dry rot. Whenever, on the contrary, it is felled during the wane, and especially from the last quarter to two or three days before the new moon, it preserves all its best qualities in durable perfection.

This opinion respecting the influence of the moon at stated periods on the quality of felled timbers, has already been the subject of much and varied discussion, but cannot hitherto be considered as fully determined, particularly as regards our climate, where so few, or no scientific experiments have yet been made. It may, however, be mentioned, that this view of the question of lunar control over vegetation is, in a great measure, supported by the celebrated French astronomer Arago; and I must candidly acknowledge that I feel inclined to lean towards the popular opinion, and to admit the reality of that influence within certain limits. Where hard wood is concerned, it is only by many years of observation, and renewed comparative experiments, that it would be possible to arrive at any safe conclusions on the subject; but in the case of soft woods, as the bamboo, for instance, or the timite and carat, that influence becomes perceptible. Bamboo, cut in proper season, and under favourable lunar conditions, lasts for several months, and is scarcely touched by insects; but whenever cut during the crescent of the moon, it soon crumbles into dust under their attacks: the same remark is applicable to the timite and carat.

The following considerations may supply, at least, a plausible explanation of the above-mentioned phenomena. When a tree is felled during the active circulation of the sap, it becomes more liable to rot: this is a general and unexceptionable fact, being founded on actual experience. Now, the question is this: Is not the quantity of the sap greater during the increase of the moon, and particularly at the full, when the quantity of light is greater throughout the twenty-four hours, than at any other period? This could be ascertained by experiments. And should the supposition prove correct, the influence of the lunar phases would no longer meet with opposition or ridicule from the incredulous, and the fact once ascertained would be the means of establishing some beneficial principles and rules of guidance in the felling of trees, and concerning other agricultural operations. I may conclude this subject by remarking, that whatever may be the diversity of

opinions or of doubts among the scientific and the educated classes generally, this idea of lunar influence, not only on woods, but on the process of planting, weeding, pruning, reaping, &c., is held as an undoubted article of credence by the small proprietors and cottagers; and, what is more to the point, this belief is successfully carried out in the management of their cultivations.

The inexcusable waste of our best timber woods is really something much to be regretted. Whenever a clearance is made for the purpose of cultivation the under-brush is cut first, and then the larger trees; after a few weeks, the whole mass of vegetation is destroyed by fire, the most valuable timber often becoming the prey of that wholesome destruction. I wish, therefore, to repeat what I have already advised in my essay on the cultivation of the sugar-cane, viz., that proper precautions should be taken for the preservation of the best forest-woods, either by allowing them to stand over, or by felling them after the clearance has been made by fire, the timber being afterwards removed to some safe place for use or sale, as opportunity may offer, or occasion demand.

Animal Kingdom.—It is not my intention to give here a detailed account of the various species which the kingdom of Trinidad embraces, but only to notice such as deserve attention for their utility, their peculiar habits, or destructive propensities.

Mammals—Quadrumana.—Two species: the red or howling Monkey (*Mycetes barbatus*), and the Sapajou (*Cebus*). The former is a large species, and very common, but extremely shy and untameable. Even when taken young they refuse food, and continue moaning day and night till they die of inanition. The red monkey has a sort of deep resounding yell (hence the term howling), which it emits particularly previous to and during rain and thunder storms; it is eaten in default of better game, and is even relished by the mixed-breed Indian and Spanish hunters, and the *conuqueros*, who often smoke-dry the flesh entire, as is their custom with other game.

The Sapajou is a small whitish ape, very common in the eastern and southern districts. It is very inquisitive, and not only does not flee at the approach of man, but will remain and examine him with apparent curiosity; its cries, however, prove that it is really alarmed at his presence. Like all other sapajous it has a soft plaintive tone, which has gained for it the name of the

weeping monkey; contrary to the howling species, it can be rendered remarkably tame, and becomes domesticated in a few days.

Cheiroptera.—Bats may be said literally to swarm in Trinidad, both in town and country; sometimes an immense number of them take their lodgings in the hollow of some large tree, from which they are seen issuing by hundreds to venture on depredatory excursions. Many live on fruits, and some others by sucking the blood, not only of animals but of man; they are so numerous in some parts, that instances of persons having been bitten several times in the same night are not rare. Although they cut out a portion of the skin in their bite, no pain is occasioned; the only protection against their attacks is light. The loss of blood from numerous or repeated bitings is, at times, so great, that large animals, such as oxen, become immediately enfeebled, and may die within two or three weeks; this, however, happens only at intervals of several years, when great loss in live-stock is occasioned to proprietors of estates. They attack, also, swine, and even fowls. These vampires are from the two genera *Noctilion* and *Phyllostoma.*

Carnivora—Digitigrada.—Tiger-cat or Ocelot (*Felis Pardalis*). —This is one of the most beautiful of the feline tribe; when full-grown, it is nearly four times as large as the domestic cat. One was killed in the ward of Guanape weighing thirty-three pounds. The ocelot preys upon all sorts of small animals, is particularly fond of poultry, and, in one night, may destroy a dozen or more. It climbs the highest trees, but, when hunted down, or hard pressed by dogs, it backs against the trunk of some tree, and keeps its enemies at bay with its powerful paws.

Gato-Melao, or Wood-dog—Faïra (*Mustela barbara*).—This animal is not common, and its habits are imperfectly known. Like the ocelot, it can ascend the loftiest trees, invariably descending head downwards: it lives upon honey, birds'-eggs, &c., and makes terrible havoc amongst fowls; when attacked by dogs, it defends itself fiercely.

Marsupialia.—Opossum, or Manicou (*Didelphis*). — The Opossum is very common here, and feeds upon fruits, birds, and carcases; it is also a great destroyer of poultry, creeps into the roosts at night, and ventures even into towns on its depredations. The Manicou is generally very fat, and its flesh tender, but is not prized as food, except by the lower classes, by whom it is considered rather a delicacy.

Rodentia.—Squirrel (*Sciurus*) very common, and a great enemy to corn, and particularly to the laino, of which he is very fond: it devours the bean of the latter, which it abstracts after having gnawed a hole in the pod.

Rats (*Mus*).—Multitudes of both rats and mice are met with in all parts of the islands. The former, however, are not, as in the older colonies, a pest to the cane-fields; but a peculiar species of a dark colour, is a great destroyer of cacao, and also of root-provisions such as sweet-potatoes and yams.

Agouti (*Chloromys acuti*).—Very common, well known, and easily domesticated. The Agouti feeds principally upon seeds and roots, and is partial to corn, the manioc or bitter cassada, and yam. This animal does not of itself burrow, but lives in the hollows of fallen timber, or in the holes at the root of standing trees, particularly the Balata; in dispositions and habits, as well as in the quality of its flesh, it resembles the rabbit; as food, however, it is not much esteemed, being dry and always requiring much seasoning to render it savoury. An exception, notwithstanding, may be made in favour of the Agoutis of our northern vallies.

Lapo, or Lape (*Cavia Paca*).—The Lape is not so common as the Aguti, and seems to prefer the high woods in the vicinity of plantations. It lives upon seeds and fruits, is particularly fond of corn, and, in order to get to the ear, brings down the stalk by gnawing at the roots. Besides its burrow, which it prepares amongst the roots of some large tree or in hollows under ground, the Lape may be said to have also a place of refuge on the margin of a neighbouring ravine or river; this shelter is, commonly, under the roots of trees forming a sort of vault. When pressed by the dogs the Lape resorts to this stronghold, and, in extremity, to the water itself, from either of which retreats it is sometimes difficult to dislodge it. It has been said that the Lape is amphibious: this is not the case; for, when apparently under water, though the body is completely hidden, the snout is held above the surface for the purpose of breathing. Though capable of being domesticated, the Lape nevertheless seems always to preserve a strong predilection for the haunts and freedom of the wild forest, to which it soon returns if left at liberty. It may be regarded as one of the richest and most delicate dishes in the shape of game, its flesh partaking of the qualities of veal and pork.

Edentata.—Cachicame, Armadillo, or Tatou (*Dasypus*).—The Tatou haunts the high woods, and subsists partly on vegetables, partly on insects; it burrows, closes the entrance of its burrow with leaves, and ventures out at night. Though not very fleet, the Cachicame is not easily caught by dogs on account of its hard shell. When tastily prepared, it forms a very delicate dish.

Great Ant-eater, or Mataperro (*Myrmecophaga tridactyla*) —It lives in the high woods, sleeping the day out in the hollows of fallen or in the foliage of green trees, and crawls about at night in search of food, in obtaining which it insinuates its long filiform tongue into the nests of ants; the insects becoming entangled in the viscid saliva which covers the tongue, are then swallowed in a mass; they also lay their tongue on the track of the Parasol-ants, and devour immense numbers of them. The great Ant-eater moves very slowly, and whenever aware of any danger, quickly throws itself on its back, and, in that posture, awaits the attack of its assailant, which it seizes with its powerful arms and fearful claws: these it plunges into the body of its enemy, gradually thrusting more and more deeply until death ensues. Its hold is so tenacious that dogs cannot disengage themselves from the murderous embrace, and must perish unless promptly relieved; hence its Spanish name of *Mataperro*, or the "Dog-killer;" it is also called the "Sloth," or again the "Poor-me-one," from its mournful night-cry, which the fancy of the peasant has assimilated to the sound of those syllables. In connection with this animal, the following anecdote was related to me:—An African labourer meeting with a Mataperro in the act of crossing the high road and mistaking it for an opossum, eagerly seized it by the tail and swung it over his shoulder, congratulating himself on his good fortune; but he had "reckoned without his host," and was compelled to call for immediate assistance, being almost deprived of breath from the embrace of his pseudo-captive.

Pachydermata.—Wild Hog, Cuenco, or Pecari (*Dycotiles*).—There are, it appears, two distinct species of Cuencos: one rather larger than the other. They range in small bands of five or eight, or in larger, of fifty and above; they haunt the high woods, and the smaller species is particularly common towards the eastern coast. When started by the dogs the Pecari takes to flight, but is soon brought to bay against a tree, or in some hollow, or other

shelter, where it makes a formidable and often a successful defence with its tusks—frequently wounding, maiming, or killing such as venture within its reach. When in force, and very numerous, they even give chase to the dogs, and the hunters themselves may be compelled to seek refuge in the branches of some tree. This animal, notwithstanding, is easily domesticated, and becomes much attached to its master. When young, and in good season and condition, the Cuenco is most delicate eating.

Ruminantia.—Deer (*Cervus simplicicornis*).—The Deer is very common in all parts of the island, but particularly in the neighbourhood of plantations, where it browses on pease, young maize, the stems and leaves of the manioc, sweet-potato, and yam, as also of young cacao plants. The Deer bears in appearance, size, and habits, the greatest resemblance to the roebuck. When captured young it is easily domesticated, and may be seen tamely following those persons who have the care of it. The flesh of this animal very much resembles that of the European deer. It is either shot from an ambuscade, or hunted down by hounds.

Lamantin, or Manati (*Trichecus Manatus*) is scarce, and found only in the rivers of the east and south coasts; it grows to a very large size, and may be regarded as excellent eating.

Cetacea.—Whale or Rorqual (*Balœnoptera Boops*).—The Razor-back is not scarce in the gulf from February to May, and is eagerly pursued for the sake of its blubber.

Birds.—The feathered tribes are very numerous in Trinidad, and many birds of different sizes and varied plumage, from the minute crested Humming-bird to the Kamichi and the King of the Vultures, inhabit the forests and swamps of the island; a few only will be mentioned.

Rapaces.—Vultures (*Vultur*).—The King of the Corbeaux (*Vultur Papa*) is a noble and most beautiful specimen; it is met with in the high woods, and does not approach towns or villages.

The Turkey Buzzard (*Cathartes aura*), called by the natives the "Governor" of the corbeaux, is black, with a red head and a strong beak. It inhabits the high woods, and is particularly fond of snakes; it may be said to be always on the wing, though seldom flying very high, but rather skimming along with a gliding movement over the tops of the forest-trees.

Carrion-crow, or Corbeau (*Cathartes Sota, Urubu*).—Colour and head black, bill less strong than that of the former; gre-

garious, and very common, but principally in the neighbourhood of towns and plantations, where they congregate in large numbers to feed on the carcases of unburied animals, the offals from slaughter-houses, and other putrid matters. They have been found so useful in cleansing the towns from filth and putridity as to be considered in the light of gratuitous scavengers, and hence are tacitly exempted from being killed; in fact, under the government of Sir Thomas Picton and Sir Ralph Woodford, such an act was punishable by fine. They, however, sometimes prove a great nuisance from the offensive smell which exhales from the localities in which they have established their abodes. They dispose of a dead rat, fowl, or other small animal, in the space of a few minutes; of a dog or cat in a few hours, and, in the country, where animals dying on estates are left exposed, they will consume the carcase of an ox or a horse in less than a week. It is really wonderful how these birds become aware of the presence of carrion. It may be that not one single vulture has been seen for weeks in a locality, but no sooner is an animal dead, even a cat or rat, than some corbeau is seen wheeling in the air above; all on a sudden it sweeps down with a peculiar hissing sound, and, after describing a rapid circle, promptly alights on its prey; others follow, and in a few hours a host of them are collected on the spot. Sometimes the corbeaux, as by some common accord, start in a body to parade (to use the local expression), when numbers of them are seen rising in the air and describing spirals, till they become nearly imperceptible; then one takes the lead, and the others follow in a line, until they arrive at some place of rest or of prey. The Carrion-crow is so familiar that it mixes in the market-places of Port of Spain with the vendors, and sometimes carries away from an incautious seller a piece of fish or flesh.

The Papa, Aura, and Tota Vultures, build their nests on the ground, generally near or between the roots of some tree; at each incubation they produce but a pair, which, in their unfledged state, are covered with a purely white down.

Falcons (*Falco*).—There are several species of the Falcon family in Trinidad; they are called here *Gavilans*. The Crested Gavilan (*Spizactus venatus*) is a large bird, grey in colour, with a large head and an occipital tuft; the tarsi are strong and feathered throughout. This bird is most ferocious, and will pick up a fowl in the poultry-yard and carry it off, even within sight and cry of

persons in the neighbourhood. The White Gavilan is somewhat smaller than the crested; it is a great destroyer of chickens, as is also the speckled species, which is still smaller. This latter is very fond of snakes; it always seizes them by the head with the bill, and by the body with the claws, so as neither to be bitten nor infolded; the snake, however, sometimes succeeds in enveloping its enemy within its coils, and thus vanquishes it: this may happen even in the air, as I have myself witnessed. The Black Gavilan lives principally on fish. The Fork-tailed Kite, or Ciseaux (*Falco furcatus*), may be said to be gregarious, as from five to twelve and fifteen are commonly seen together; they are also migratory, being never seen except during a short interval in the rainy season.

Passeres.—The number of passerinæ is very great in Trinidad, but I shall notice a few only. The Tyrants are remarkable for their indomitable courage, and even the Gavilans and Corbeaux yield to their repeated attacks; also, minute and apparently frail as it is, the Humming-bird attacks all other birds, and ultimately succeeds in driving them away from the tree whereon it has built its nest. Our Tanagers are not only conspicuous for their gorgeous plumage, but several of them are excellent warblers; a wren (*Troglodytes vedon*) is known here as the Rossignol, or Nightingale, on account of its note; it is very familiar, and frequently builds under the eaves of houses. The Averano, or Campanero (*Cotinga variegata*), has a very remarkable cry, as being of a purely metallic sound; hence its Spanish appellation of *Campanero*, or Bell-ringer, and its equally common name, among the peasantry, of the *Blacksmith*. The French call it *Capucin*, from a number of dark capillary appendages which hang from the throat of the male, and bear some resemblance to a beard. One of our Cassiques has gained the name of the Mocking-bird, which it really deserves, as it imitates the songs of many of the feathered tribes, and even the sounds made by other animals. Several species are gregarious, and one (*Cassicus cristatus*) particularly so, numbers of the latter constructing their nests close together; these are in the form of long cylindrical bags, made of thready fibres, which the birds generally procure from the balisier. The upper extremity of the nest is formed first, the threads being, meanwhile, allowed to remain pendent; the architect, from within, then draws them up and interweaves them, so as to form a very

close and strong shelter, the lower extremity being hemispherical, and thicker than the other parts. It is a curious sight to observe some forty or fifty of these aerial constructions hanging at the extremity of the branches of a large tree, and swinging to and fro with each undulation of the breeze.

Several of our Creepers, or Grimpereaux, are remarkable for their brilliant colours, and out of nineteen species of Humming-birds, not a few exhibit the most dazzling plumage. They extract the nectar from the flowers of the highest trees—the *Erythrina*, the *Inga*, and others—or are seen culling their honeyed food from the *Curassavicu*, or the bloom of our garden-plants; but the habits and beauty of the Humming-birds are too well known to require any further illustration. Amongst several species of Picucules (*Dendrocolaptes*), one is known by the name of Cacao-eater. With its long and strong bill, it pierces a hole in the ripe pod, apparently to suck the sweet mucilage that covers the beans within; and each pod thus attacked, together with its contents, rots on the tree, so that these, not uncommonly, wholesale depredations often occasion great loss to the cacao planter. The Merle Cavalier or Black Corn-bird (*Cassicus Ater*), sometimes makes great havoc in the corn-fields, by removing with its bill the husk of the ear; and although it eats but a few grains, the mutilated ear invariably rots from being exposed to the rain or heavy dews.

Very few individuals of the Passerine order are useful as articles of food; though in this respect they are chiefly neglected on account of their small size. The following are occasionally served on our tables, viz.: Longue-queue (*Tyrannus Savanna*), the Campanero, several Tanagers and Thrushes; also a Goat-sucker (*Caprimulgus Caripensis*)—Guacharo or Diablotin. Of the latter, the young only are acceptable, and they are caught in the nest during February and March: the fledged bird is not eatable. Nevertheless all the Passeres have their utility, in destroying an immense number of insects, which otherwise would become an intolerable pest; even the Merle Cavalier and the Merle Corbeau (*Crotaphaga ani*), are of notable assistance in clearing the blood-thirsty tick from the hides of oxen, horses, and mules, in the Estates'-pastures.

Syndactyles.—To this order belong the *Voutou* or Mot-mot (*Prionites Brasiliensis*), the Tacamar (*Galbula Paradisea*)—of a

beautiful metallic colour—the Ani and Toucan (*Ramphastos*); the latter is very common in the high woods; the Voutou and Toucan serve as food. Trinidad harbours several varieties of Parrots, and among them two Aras or Macaws; they are met with only in the high woods, where they generally perch on the highest trees. There are also two kinds of Parrots proper (*Psittacus*) in the island; they are gregarious and prefer unfrequented places, though sometimes met with in cacao plantations, whither they resort to eat the green fruit of the *Erythrina coccinea*. Generally speaking, they fly about during the day in search of food, and return in the evening to some favourite spot to sleep; in this they show a preference for the mangroves, and when assembled in some such locality, their loud chattering is absolutely deafening. The Paroquets (*Cornurus*) are mostly found in inhabited localities, and live chiefly on the fruits of the Ingas. Although gregarious, they are much attached individually, and when one of a pair has been killed, the other will, for several days, haunt the noighbourhood—perching on the summit of some tree—and almost incessantly call for its departed mate. Another kind, known as the seven-coloured Paroquet, is met with everywhere in the island: it lives upon insects and the fruits of the *Clusia*, generally builds in the nests of the Termites, and lays from six to ten eggs. This beautiful bird has never been tamed so as to live in a cage; when taken it refuses food, and consequently dies in a few days. The Ara, though tough, and therefore discarded from the table, is prized as a domestic favourite for its gorgeous plumage; but the Parrot and Paroquet, when young, are much esteemed for the delicacy of their flesh.

Gallinaceæ.—This order is remarkable for furnishing man, here as in other countries, with an abundance of excellent game. At their head is to be placed the Pauji or Yacou (*Penelope*), as the largest gallinacean to be found in Trinidad; it is of the size of a large domestic fowl, and is very choice fare. It lives generally upon berries, and is very stupid; so much so that, if several are met with together, they can be shot in succession, as they do not fly, even after their companions have been killed. They are easily tamed.

Next to the Yacou come the Speckled Ramier (*Columba speciosa*), and the Mangrove Ramier, both of the size of a

pigeon. The latter generally seeks its food in the fruits of shrubs, and often on the ground; the other on larger trees, and seldom alights lower. Next to these may be mentioned eight kinds of doves, of which four only are known here as such, whilst the others are designated by the names of partridge and ortolans: the former are chiefly distinguished from the latter by their superior size. In general they prefer cool localities, such as the banks of rivers, particularly as they are fond of bathing, and of drinking pure limpid water. The ortolans are smaller, and their habits somewhat different. The Blue Ortolan (*Columba cinerea*) is a beautiful bird, of an ashy blue colour, spotted with black: it is not so common as the other, and prefers the high woods. The Red Ortolan, or Ground Dove (*Columba Cocotzin?*), is of a reddish-brown colour, barred with black: another species is the smallest, and is found only, it appears, at the Bocas' Islets and at Cedras; it is of a lighter colour. The partridge is, in size, intermediate between the dove and the ortolan. The habits of the blue ortolan are but imperfectly known, from its being so excessively shy; the red ortolan, on the contrary, is familiar and gregarious, and troops of forty and sixty alight at times in the rice fields, or among the maize-stubble; the smallest species are always seen in pairs, the male and female seeking their food side by side. These doves, particularly the red ortolan, are easily tamed.

A species of Tinamoo is also very common here: it is about the size of a partridge, and is met with almost everywhere in the colony: it seems to prefer copses or underbrush, on the borders of the high woods. The Tinamoo is known here by the appellation of caille, or quail: it is a very difficult shot, unless seen feeding on the ground, as it starts up in flight quite suddenly, and alights at a very short distance: it also runs very rapidly through the underwood. The Tinamoo lays two eggs, of a most beautiful violet colour, and sits with such fondness on them as, in that state, to be easily caught with the hand. This bird has a peculiarly tremulous and prolonged whistle, the note of the male being different from that of the female: they are heard early in the morning, at sunset, and also at mid-day, and midnight; and so regularly are their notes timed in general, that they serve as the peasant's chronometer. As I have already stated, all the above gallinaceans are delicate and excellent game; and the ramiers and doves are at times offered for sale in our markets.

Grallatoriæ. — Many species of the Grallatoriæ order are either permanent inhabitants of the island, or visit it at regular intervals. The former consist of herons, known here by the name of Crabiers, or Crab-eaters, and Egrets; several of them are regarded as very good eating, particularly the mountain crab-eater (*Ardea liniata*). The egrets assemble in large flocks in the marshes of the island, and, at certain periods of the year, numbers of them can be seen on the *basses*, or mud banks of the Caroni and Couva rivers. The mountain crab-eater and the soldado (*Tantalus loculator*) are scarce. The golden and ring plovers visit the island during September, together with hosts of chevaliers, sandpipers, curlews, and even snipes (*Scolopax Gallinago*), as also the surgeon (*Tacana*). The Flamingo, or red Ibis, (*Scolopax rubra*), and Spoon-bill (*Flatalea Aiaia*) are habitual residents, or occasional visitors. They are all of excellent flavour, but some of them, particularly the chevaliers and sandpipers, are little sought after, on account of their diminutive size. Though very common, particularly the wood-hen (*Rallus longirostris*) our Rails are seldom served on table; the same remark is applicable to our water-hens (*Gallinula chlorapus* and *Porphirio Tavana*).

Palmipedes.—Ten different species of ducks are met with in the island, all of them deserving the reputation of being delicate eating: the largest of all is the common duck of the country, or the Musk Duck (*Anas moschata*), commonly but improperly called the Muscovy Duck: it is a native of Trinidad, as are also the Vingeon (*Anas Dominica*), Ouikiki (*Anas autumnalis*, *A. viduata*), and the Teal (*Anas discors*); in November and December, other species make their appearance—viz., the Poachard, the Shoveler (*Anas clypeata*); and the Tensenne (*Anas Americana*).

Shooting, in our climate, is an occupation less exciting and much more fatiguing than in Europe, though, however, marsh-fowling bears some resemblance in both latitudes. Here is, certainly, no extensive field, or meadow through which one can stroll quietly, in company of an intelligent pointer, which has also its share in the sport: no clear wood which one can thread at ease, no park intersected with alleys, in which one can ride or drive. Forests intricated with lianes, "crocs-chien," "devil's-guts," or "sword-grass;" marshes and lagoons, overgrown with mangroves, reeds, or rushes, and teeming with mosquitoes; mud-banks, deep

ponds, and malaria. Such are the attendant difficulties which the sportsman has to encounter and overcome; in addition to which, he must himself go in search of his game, and collect it when killed. Ramier-shooting, however, may be said to be free from all these drawbacks: the sportsman generally awaits them under some tree—the Gommier, or the Suette, for instance—whither they flock to feed, in the afternoon or early in the morning: there he stands in keen look-out, for this sport requires a keen eye and steady aim. The birds alight, shots are poured in, and after each, the frightened Ramiers take to flight, but soon to return, again and again, as long as they have not satisfied their craving appetite. They are also looked for, during the heat of the day, *in the shade*, that is to say, in some thick part of the forest, near a rivulet, whither they resort, apparently to enjoy the cool, and it would almost appear, to take their *siesta*. Being now *full*, from their morning's feed, after each discharge they flutter to some near tree, where they are easily discovered and followed. The doves are generally killed when feeding on the ground, or on call, in such spots as they frequent for water; the ortolans, in rice-fields, or in some copse-wood wherein they assemble. Parrots and paroquets are watched at some tree on which they alight to feed—the former, however, especially in their sleeping places—where a good number may be shot in a short time.

Marsh-fowling is, on the other hand, irksome and harassing. The crabiers and egrets choosing, generally, some mud-bank, and the fastness of some mangrove swamp, as their habitual haunt, cannot be approached with facility, both because they can discover the enemy at a distance, and take to flight in time to escape, and because it is always difficult, if not impossible, to wade through the mud to get a nearer approach. The red ibis and spoon-bill are sought after in the midst of damp natural savannahs, or in lagoons, where they keep along the border of ponds and rivers, always on the look-out, and ready to take wing; but as they are very heavy in their flight, they are easily shot, whenever within range. Of all our birds, however, the ducks are the most difficult shot, for they are very cunning and extremely fleet, the teal especially. They commonly alight in troops in some secluded pond, in the midst of damp localities or lagoons; and to approach them it is necessary to walk knee-deep in the mud and waist-deep in the water, or again, to paddle with the greatest precaution in some light canoe. If for-

tunate enough to come within range, the sportsman has the chance of firing on them while still floating on the water, and again on their starting, so that, as many as from ten to twenty may be brought down at this double shot. Plovers, sandpipers, and other smaller species, are generally killed on the wing: the plovers, seeking damp pasture-grounds and ploughed lands, are easily approached.

At the conquest of the island—a period when the population was scanty, and all sorts of game in great abundance—several *émigrés* from the French colonies, whom I could name, drew a subsistence from the return of their chase, some from the sale of ramiers, others of ducks. Every day they would send to market a few dozen ramiers or ouikikis, which fetched at the rate of sixty cents, or 2s. 6d. per pair. The number of those birds has decreased to such an extent since, that any one now choosing such a precarious occupation as the chase, for a maintenance, would inevitably starve.

Reptiles.—Numerous as reptiles are in Trinidad, a few only will be mentioned as deserving notice, either on account of their utility, or of their venomous characteristics. Besides the turtle, both the land and fresh-water tortoises are eaten, and when in good season and condition are not to be despised; the liver of the morocoy is as delicate, or even much richer and choicer than the *foie gras;* it requires the condiments of lime juice, salt, and pepper, and must be dressed in the frying-pan. Morocoys are sometimes kept in pens, and fattened upon ripe plantains, guavas, &c., for the table. By far the greater number of sea and land tortoises exposed for sale in our markets, come from the Main.

The common Iguana, but particularly the Mato (Salvator), are not to be rejected from the table; the flesh of the latter, both in appearance and taste, very much resembles that of a tender fowl. Some persons are also very fond of iguana eggs: they are nearly cylindrical, with rounded extremities.

The supply of food derived from the great class of reptiles, is much greater than is, perhaps, at first thought. From the Spanish Main alone, the town of Port of Spain receives, on an average, 4,000 pounds of turtle per annum, to which we may safely add 4,000 pounds more, as representing the quantity supplied to all other parts, including, however, a quota from the island itself; thus the whole quantity of turtle consumed in the island would amount to 8,000 pounds; if to this we add 1,000 pounds more for morocoys,

lizards, matos, we shall then have a grand total of from 9,000 to 10,000 pounds of flesh supplied from the grand class of reptiles.

Although venomous serpents are numerous and common in Trinidad, accidents arising from their bite are of rare occurrence, either because the Mapepire and Cascabel (Crotalus mutus, and Trigonocephalus Tararaca), being very sluggish, are easily avoided, or even do not attack or inflict wounds, except on their being disturbed in the enjoyment of repose; or again, because those who are more exposed to their encounter, such as sportsmen, are in the possession of good antidotes. The guaco, however, and the roots of the manaco palm—both rather common plants—are the favourite remedy for the bite of serpents. Dogs, in the woods, as also horses and mules, in the underbrush, are common victims of the Cascabel and Mapepire. Casualties from the bite of the Coral snake (*Elaps corallinus*), must be very rare, since many persons even regard it as perfectly innocuous: this opinion I myself entertained for a long time, and until I had too convincing a proof of the contrary in the death, within a few hours, of two robust African labourers, under the following circumstances. These two men were at work in a cane-field, on "La Marguerite" estate, in the ward of St. Joseph; having discovered a coral snake, they laid hold of it by way of amusement. Of the warning given by their fellow-labourers they took no notice, but, on the contrary, continued to tease the reptile, and even put its head into their mouths. They were both bitten, one on the lip and the other on the tongue; this happened about 1 P.M. The one who had apparently most irritated the snake, soon began to reel about like a drunken man, and was next taken with convulsions; he died about eight o'clock, and the other about nine, the same day. This coral has been preserved by Dr. Court, and measures four feet and a half.

The Clibo or Cribo haunts inhabited places, and is occasionally seen in houses, where, however, it ought to be welcome as a destroyer of rats. This coluber is very determined, particularly the black kind, and it has been known to give battle, and even chase, to man. When a child, I was once pursued by a clibo, and I also distinctly remember having witnessed one in combat with a gentleman, on which occasion it would stand erect on his tail, and bite at the garments, meanwhile hissing and inflating its neck: the clibo, like the mapepire, also produces a rattling noise by the rapid motion of its tail. The Macajuel, whenever irritated, inflates

its body, and then loudly emits a fetid and sickening breath, which causes a sort of fainting sensation.

Those who have had an opportunity of observing snakes cannot but admit what has been said of their power of fascination. Do they exercise that power under all circumstances? This I do not believe. Can this power be considered as a sort of magnetic emanation from the serpent, which subdues the victim, and as distinct from the indescribable terror with which it inspires the smaller animals? This again I very much doubt. Be it what it may, that power of fascination is exercised both by venomous and non-venomous serpents, and apparently through the instrumentality of the eye: for during the whole time that the victim remains under the influence of the charm, the serpent's eyes are intently fixed on the helpless creature, following all and each of its movements. In relation to this subject, I may, perhaps, mention the following cases which were reported to me by trustworthy witnesses. Being struck by the distressing cries proceeding from a bird on a tree, Mr.——, on examination, perceived the poor little creature, leaping from branch to branch, in a state of apparent agony, and uttering incessant plaints; not far from it was a clibo, following all the agitations of the victim by a slow motion of the head, and with fixed and glistening eyes; the bird was so much fascinated, that from leap to leap, it came within reach of the clibo, nearly into its jaw, and was swallowed; on another similar occasion, the charm was broken by striking the clibo, and the bird escaped. The next case is that of a Mapepire and Squirrel. A troop of squirrels was met with in a copse, one of them manifesting all the symptoms of anxious distress, as if actually riveted to the branch to which it clung—there screaming, trembling, and stretching in agony, as if apparently trying to get a firmer hold of the branch, but all to no purpose, for it soon dropped, and on the party approaching, a mapepire was discovered beneath, with the squirrel in its maw.

Ameivas are useful in gardens when they destroy numbers of mole-crickets. During the whole rainy season, and also after heavy showers, toads of all kinds and sizes unite their varied croakings in discordant concerts—from the most acute falsetto to the gravest bass, occasionally drowned by the accompaniment of a chorus from our larger species; they are generally assisted, in the minor notes, by frogs. Hearken! the loud croak from this cluster

of bamboos by the bank of the river, and in the still of the night, is the harsh and solemn "FROG—FROG—FROG" of one of our hylas; another species is often met with in some obscure corner of a house, where its croaking is a sure announcement of coming rain. If placed in a bottle with water, it generally keeps motionless at the bottom during dry weather, but rises to the surface and commences its croak on the slightest indication of a shower.

Fishes.—Out of about fifteen different species of fresh-water fish, only a few are eaten, the others being neglected, from their small size. The largest of those eaten is the guabine (*Erythrinus*), which is regarded by some as a great treat; but, in reality, it is neither a savoury nor a delicate fish, as it never loses a certain taste of mud, and is besides difficult to eat, owing to its flesh being crowded with small bones exactly resembling the letter *y*. The yarrao, which resembles the guabine very much in form, is smaller in size, but has not the same quantity of bones, and, on the whole, may be said to be delicate eating. Next come a fine little pike (*Gerres*) and barbel (*Mysus*), also the Anne-Marie (*Hypostomus*). Our fresh-water sardines (*Hydrocyon*) are neglected on account of their small size, but, when properly dressed, would bear comparison with the gudgeon. None, however, is so much prized as the cascaraduras (*Callicthys*), and it really is delicate eating. Cascaraduras are offered for sale in country and town during the dry season, at which time an enormous quantity is procured from the ponds in the Grand Savannah. The following saying may be noted as expressive of the high opinion the natives entertain of this fish: "He who has eaten cascaraduras must die in the country." It ought not to be confounded with the chat or cat-fish (*Callicthys*), which is not commonly eaten.

Of our salt-water fish, the following are the most common:—the carangue, the Spanish mackerel or carite, the king-fish or tassard, the gar-fish or orphie, and a smaller species called the calaou (*Hemiramphus*), the barracuta; of these the king-fish and "*carangue grasse*" are the best. Under the general denomination of *red fish*, are sold several species of snappers, red-mouths, and sardes, all very good and delicate. To the above may be added the gruper (*Mesaprion* and *Clinus*), the lebranche and mullets (*Mugil*), the dories or lunes (*Vomer* and *Zeus*), the crapaud, rays, and the conger-eel; a species of caranx, of the size of a sardine, and called here the anchovy: of the

last, an immense quantity is taken in the Gulf during July; they are migratory, and disappear in two or three weeks. The zapatero, salmon (*Otolythus*), and cod-fish (*Elacates*), are sold occasionally in our markets, as they keep but for a short time. The dog-headed eel (*Synbranchus*), though, in my opinion, delicate eating, is rejected from the table, on account of its resemblance to a snake. I confess, however, that the French proverb "*La sauce fait manger le poisson*," is applicable to a number of our fresh and salt-water fishes; Madeira or Bordeaux wine, for instance, is the best sauce for crapaud and gruper; king-fish and snappers are served either boiled or stewed; the dories fried mainly, as also the mullet; the lebranche roasted, with the addition of lime-juice and Cayenne pepper.

The variety of our fishes is very great, and yet fish of good quality is rather scarce; the principal reason is, the impossibility of keeping it fresh for more than a few hours; in fact, the change produced in the quality of the fish is something remarkable, and can be appreciated only by those who have had an opportunity of procuring it just after its capture. The salmon and mullets particularly do not keep long; those which stand better are the king-fish, Spanish mackerel, sardes, snappers and gruper, also the carangues.

Crustacea.—Crabs, cray-fish, shrimps, and lobsters, are common. Besides the sea-crabs, there are in the island two land or fresh-water species,—one about the size of a dollar, and of a red colour; it is to be met with only at the beginning of the wet season, at which time it comes forth to breed; it is not eaten, and the Negroes are under an impression that any one eating it will certainly "turn crazy." The other land species is as large as the common crab, and of a dark brown colour: it is called the "mountain-crab," from being found on the hills, also along the banks, and even in the beds of rivers and brooks; it is by some much esteemed as an article of food. Among the sea-crabs two kinds are eaten—the blue, which burrows in low lands along the sea-board, and the brown, which lives amidst the rocks. The blue crabs are in such prodigious numbers in some places that the soil is literally furrowed by them; in September they leave their recesses, and betake themselves to the sea, there to deposit their spawn.

The island lobsters, cray-fishes, and shrimps, are much like

those of Europe; excellent and very beautiful cray-fish are taken in the Carani and other rivers in nets. Both the sea and land crabs are occasionally hurtful, probably from feeding on poisonous substances, more especially the fruits of the Manchineel tree.

Arachnida.—Spiders are numerous, and some of them of very large size; several kinds frequent the dwellings in towns and villages, spreading their webs almost everywhere in houses, where they are useful in destroying cock-roaches and other vermin. Two species are venomous, and one particularly so, viz., the crab-spider (*Aranea avicularia*): it bites most severely—swelling of the part and fever for about twenty-four hours being the result.

There are two species or varieties of scorpions, known as the *gray* and the *black:* they are both venomous, yet very seldom does death follow their sting. A few cases, however, have been known of infants having died from exhaustion occasioned by the violent retching produced by the sting of scorpions; and even adults have been severely affected and weakened. The accidents arising from the bite or sting of scorpions depend evidently upon various causes, and particularly, it would seem, upon the part into which the virus has been instilled, and its more or less complete absorption; it may also vary in effect according to the age, the sex, or other circumstances connected with the animal itself.

Myriapoda.—The mainland, and particularly the islets at the Bocas, have gained a notoriety for the immense size of their centipedes, some of them being more than twelve inches long; the centipedes bite severely, and are venomous, but never to the extent of the scorpions, though the pain be locally more acute. The congori (*Iulus*) is perfectly innocuous to man, but injures fruits and flowers. Ammonia, lime-juice, and the musk-ochro, are excellent remedies for accidents arising from the virus of the above insects, but the guaco is by far the best: the part must be well rubbed with the extract or tincture, and some taken internally. When the plant itself is within reach, let it be pounded or bruised previous to its application to the part affected, the juice being also taken internally at the same time.

Insecta.—The *bête-rouge* is very troublesome from the itching it causes; thousands of them sometimes collect on the heads of horses and other animals.

Ticks (*Ricinus*).—These are very troublesome insects: there

are two distinct species—the *tick* and *garrapato*. The tick is larger, of the size, colour, and appearance of the castor-oil seed; whence its zoological name *Ricinus*. It adheres to the hide of animals, particularly to the inside of the ears, and other denuded parts. The garrapato is smaller, flat, and of a brown colour; it is particularly common in underbrush, and the high woods. It sticks to animals exactly like the tick, but its hold is firmer, and, when efforts are made to tear it away, it breaks, and its sucker, remaining fixed in the skin, causes an intolerable itching for weeks and months. Ticks and garrapatos sometimes collect by hundreds on the animals allowed to pasture in the natural savannahs; they particularly follow horned cattle, horses, mules, and dogs. Some of these animals may be said to contract at times a tick-disease, hundreds of them being found sticking to the hide a few days after as many had been removed. The best remedy against these insect-pests is the carapa-oil: they die within one or two days after its having been applied.

Chigoes (*Pulex penetrans*) are very common; however, they prefer dry, dusty localities, and multiply particularly where animals herd together for rest: the numbers bred in such spots at certain seasons are sometimes enormous. The chigo is not only troublesome on account of the itching and pain it occasions, but may become, from neglect and uncleanly habits, the cause of dangerous sores, particularly on the toes and soles of the feet.

Of the coleoptera a few only will be mentioned, viz., the cabbage-palm (*Curculio*), called here the *Groo-groo Worm*, of which the larvæ are much esteemed by our *gourmets;* and a longicorn, that lays on young cacao-trees its larvæ, which, by devouring the inner bark, cause the plant to die. Some insects of the weevil genus also occasion great damage in the corn, rice, and even in the corn-meal and flour of provision stores: another species of the same genus attacks books and papers, and renders it an arduous task to keep them in proper order. The bamboo, which is much used for fences and other purposes, is liable to the ravages of coleoptera, and crumbles to dust in a short time under their attacks. The fig-tree, which otherwise grows and thrives well in the colony, is also attacked by another coleopterous insect the larva of which is about one inch long, and very much like a caterpillar: it perforates the wood, and takes its lodging in the pith; if not assiduously watched, the tree soon becomes en-

feebled, and yields but scanty and insipid fruit. Other insects deposit their larvæ in many of our fruits, such as the guava, the lemon-apple, the sapodilla, the star-apple, sour-sop, sugar-apple, &c.; but they show a decided preference for the guava, so much so that seldom is a ripe guava without worms. Some of our vegetables, and particularly the cajan, or pigeon-pea, are also attacked by an insect, the larvæ of which eat into the pod and destroy the bean.

Without dwelling on the many kinds of cock-roaches, blattæ, or butterflies, which are all numerous and common, it may be stated here that the *Fulgora laternaria* has been found in the island. There are also two kinds of grasshopper or cicada: one smaller, with a gay, thrilling chirp; the other larger, with a tremulous, graduated, and prolonged whistle: the former gaily celebrates the arrival of the dry season, the other is the as melancholy foreteller of heat and rain. Locusts visit the shores at long intervals, and make ravages similar to those of other countries; caterpillars also swarm over some parts of the island at periodical intervals of eight or nine years, laying waste portions of pastures and cornfields. With regard to these visitations, it has been remarked that both locusts and caterpillars make their appearance after long periods of drought. In the year 1846, caterpillars visited Mayaro and Couva; and this very year (1855) they are depredating Coura and Savanetta. However, the cane-fields thus traversed by these insects have not apparently suffered from such molestations. Butterflies are numerous, and amongst them a few beautiful kinds. It may as well be mentioned here, that there exist in the island two species of caterpillars, the larvæ probably of moths, which, whenever placed in contact with the skin, instantly raise a blister, causing a horrible burning sensation, like that of a hot iron: they are one inch long, and covered with long hairs of a fawn colour.

Mosquitoes (*Culex*) and sand-flies abound in the low marshy parts of the country, particularly near the sea. In some parts of the interior, at Arouca, Arima, and Guanape, they are only seen occasionally, and mosquito nettings to the beds may be dispensed with. There are two distinct species of sand-flies; one very small, of a gray colour; the other nearly double in size, and entirely black: the former is an inhabitant of the sea-shore particularly, the other of the interior. The black sand-fly becomes

common at certain periods only: it generally attacks the legs, seldom the face or hands, and its bite occasions an itching sensation, but no bulla, the place being marked by a very small black spot, formed by coagulated blood. The gray sand-fly is by far the most troublesome of all insects: when in swarms it attacks men or animals; and, small as it is, causes extreme irritation, whilst the spot bitten swells immediately into a bulla resembling nettle rash: they creep into the sleeves, penetrate even into the ears and nostrils, animals becoming sometimes unmanageable under their attacks.

Three kinds of breezes, or gad-flies, are found in the islands, and commonly known as horse-flies. One is somewhat smaller than the common fly, and of a gray colour; it bites severely, and is exceedingly numerous during the summer months; it is met with everywhere, especially in towns, and on estates. The second species is of the size of a bee, and of greenish-yellow colour; it is found in the country, and on the skirts of the high woods, and comes out generally between four o'clock and sunset; its bite is severe, and sometimes blood trickles in drops from the wound. The third species is larger, of a light brown colour, with large green eyes; its habits are very much like those of the green breeze, or gad-fly.

It will, however, suffice to mention only two kinds of flies which appear to be of the same genus, and even of the same species, as those of Europe, viz., the blue flesh-fly (*Musca vomitoria*) and the viviparous gray fly (*Musca carnaria*). The blue fly, it seems, more especially haunts inhabited places. The gray fly is met with in the high forest, and they must, indeed, be numerous there; for, let any putrid substance be exposed, and it is immediately covered with swarms of those flies. These insects are a source of loss to the planters, and an incessant cause of annoyance even to individuals; for the moment an animal presents a raw surface on its hide, however small it may be, they are sure to deposit their larvæ on the spot; they act similarly on the wounds or sores of incautious persons. I remember the case of a man who had some sore in one of his nostrils, and lived near a slaughter-house; being a confirmed drunkard, he one day fell asleep in the open air in front of his dwelling; a few days after he was taken with intense headache, and soon after with hemorrhage from the nose. On examination, it was found that the evil was

caused by two or three dozen worms, arising from the above-mentioned fly. They are also invariably deposited on the navel, and not unfrequently on the very lips and gums, of newly-dropped calves, so that the most watchful attendance is required for several days after birth.

Several applications are used in the extirpation of these troublesome insects, such as tobacco, the grated rind of the green bitter orange, and sapodilla; but this latter is, by far, the surest and best remedy. After the worms have been killed, the part must be protected by turpentine or carapa oil, which is applied once or twice a day till the wound or sore is perfectly healed.

Another injurious insect is the oestrus; it deposits its larvæ in the bodies of animals, and even of human beings. It is known here by the name of *Ver-muringorin*, or *Mosquito-worm*—the people being under the impression that the larva is that of a large mosquito; but the fact is, that no one here has ever seen the mother-insect. The larva of the oestrus has its head at a small aperture immediately under the skin, probably for the purpose of breathing, as it dies within an hour or less, if the access of air be efficiently checked. This is done by covering the part with a piece of sticking plaster.

Of bees, or honey-flies, there are four species; three black, of which one is smaller than the common fly, another larger than the common bee, and the third of an intermediate size. The smaller species build generally in walls, and the other in the hollows of trees. Their honey is very good, and the wax soft and black. The fourth kind, of a light brown colour, and the size of the European bee, has the habits of the two larger black species—none of them sting.

Six or seven species of wasps exist in the island, some of them building very ingenious nests, and several stinging very severely, viz., the common brown wasp, locally called the "Jack Spaniard," which builds in houses, and the species called here the Paton wasp (*Polistes*), from the resemblance of its nest to the barred shell of the armadillo. Of this wasp there are two species; they build their nests against the trunk or the larger branches of trees, with an entrance hole at the lower extremity. The smaller species of the paton wasp is more than half an inch long; the larger above one inch. They are of a bluish colour, and fever is generally brought on by their sting.

Termites, or wood-lice (*Termes devastans*).—The wood-lice, or

termites, are too well known to require any extended notice; I will only remark that the nymphs, not the grown insect, are destructive. The nymph is of a whitish colour, and without wings. The males and females are provided with very long wings, of a dark-blue colour, and the insects themselves are of a light brown hue, with a brownish dark head; the wings are very readily detached, which operation the animal itself performs with its legs. During, or after, heavy rains, they issue, as it were, from every corner, literally clouding the air, where they become the prey of swallows and other birds. This remark does not apply to the termites only, for cock-roaches, ants, and other insects are observed to rush out of retreats, or to abandon their nests in heavy rains, some in a state of visible anxiety, as the cock-roaches, for instance, which are seen running or flying in all directions. How to account for this influence of rain? Really, I cannot discover any satisfactory explanation: they are not forced out by inundations, since many live in houses; they do not come forth in search of food, not even, I think, with a view to breeding. The wood-lice are certainly very destructive, but their ravages here are not, by any means, to be compared with those of the white ants in Africa, and southern Asia, particularly. They build their nests in trees, or in houses on the beams and rafters, with covered galleries for communication from one point to another; but they more commonly take their lodging within the wood itself, which they gradually destroy, and that in a very short time, by forming longitudinal excavations throughout the interior. Scantling, boards, &c., thus eaten away become a mere shell, and break down, though, to all external appearance, entire and sound. They attack, in preference, the softer woods, and are very partial to white pine, and other foreign timber; but they rarely invade the country growths, and especially our hard woods; hence the inappreciable advantage of the latter for building purposes. I am not aware that the termites of the island ever raise such pyramidal earth-structures as the white ants of Africa and Asia do.

Ants.—Few countries can be said to harbour so many species of ants, and in such numbers, as Trinidad. Although it is not pretended that a description of all can be given, above twenty distinct species are, however, well known. Of these, several tribes inhabit the high woods, and are never seen in towns or dwelling-houses; whilst others seem to prefer the haunts of man, where they

find an abundance of food. They vary in length from one-twelfth to about three-quarters of an inch; some bite, others sting; several have a very strong and unpleasant odour: some raise their hillocks from under ground, others build in decayed, a few in the hollows of living trees, as, for instance, in the interior of the soft trumpet-tree, which they pierce in order to effect a lodging in its internodes; others build a regular kind of mortared nest, against the trunk or larger branches of trees, in a manner similar to the wasps and termites. Several of the kinds inhabiting houses deserve a few words of notice. Of these, the stinging black ants are met with almost everywhere; they form their nests under ground, or at the roots of plants, particularly of those upon which the "pucerons" feed; they carry numbers of the latter to the plant, and build along the stem and twigs covered galleries, besides which they devour the bark of the roots or stem, so that the plant, both from the attacks of the "pucerons," and their own devastation, soon perishes. The black ants sting very severely, and, when disturbed, they rush out in numbers, and most fiercely. There are two species of the red stinging ant, one of which, called the sugar-ant, seems to be the smallest of all the kinds here; they both sting, particularly the smaller one, and the burning and itching sensation they cause lasts more than half an hour. They are very fond of sweets and olive oil, so that it is always necessary to place those articles out of their reach. The black and red ants move slowly. The "cr y ant" is black, and is about one-eighth of an inch in len it always seems to be in a hurry, moving very rapidly ba ls, forwards, and sideways, as if it were mad; hence its *sc uet.* These ants are particularly fond of sirup and sugar; they are also carnivorous, and nothing is more amusing than to observe thousands of them carrying along large cock-roaches, worms, or other dead insects. If they encounter a crawling worm, immediate notice is circulated among the tribe, and, in a short time, hundreds of them march to the attack; their huge adversary rolls and contracts in self-defence, but, although tossed about, the ants hold fast, fresh recruits come to the rescue, and, after a struggle of more than half an hour, the giant is subdued, and carried to the nest, part of the host pulling forwards, and part raising up, so as to lighten the draft. Once arrived at the entrance of the nest, which is generally small, and cannot admit the booty, the ants cut their prey into small pieces, which they carry down;

one only, or a dozen or more, taking charge of each piece, according to the size. The crazy ants neither bite nor sting.

The hunter and parasol-ants deserve pecular notice. The former, or visiting ant, called also *Fourmi chasseuse*, is not, I conceive, the *Atta cephalotes* of Fabricius, because the head is not comparatively large; it is of a brown colour, but the abdomen of a lighter hue than the thorax and head; when full grown it is about one-third of an inch long. This ant is very active and quick in its movements, stings most severely, and may be said to be excessively fierce in its attack. It is exclusively carnivorous, and, after killing its prey, divides it into portions, each ant carrying its share of the spoil. The hunter ants do not build nests, but choose recesses in some decayed tree, or among dry leaves, forming a sort of moss, sometimes two feet in diameter, where they congregate during the dry months; in fact, they are nomadic, being always engaged in some predatory excursion, and preferring the wet to the dry seasons for their expeditions; they carry with them their larvæ close to the body. The army, or tribe, on starting, marches on a frontage of from about five to six feet, by ten feet deep; then follow three or four columns, which afterwards are formed into two, and sometimes only a single section, this rear-guard being sometimes half a mile from the expeditionary corps actually engaged in spoliation. The latter beats up the ground, climbing the smaller trees, groping into every hole, under every leaf, and leaving nothing unvisited. Not only insects and the smaller animals fly in every direction, but even the larger species are compelled to give way; for the hunter ants kill every living thing in the way of their march, young birds in their nests, animals too young or too weak to escape, cock-roaches, scorpions, crickets, &c., and carry away the larvæ of insects and their nymphs; they dare not penetrate, however, into the nests of the parasol-ants, which defend their townships bravely. The hunters are generally accompanied by anis, thrushes, and other birds which feed on insects; and during the bustle of their ravages, there is a sort of crackling, occasioned not only by the movements of the ants themselves, but also by the frightened insects that flee in all directions. The hunter ants sometimes visit houses where they destroy an immense quantity of vermin;—rats, mice, cock-roaches, centipedes, scorpions, become their prey, or are obliged to abandon the house. It is well, then, to protect oneself and the young of the

domestic animals from their attacks; in fact, the inhabitants sometimes find it the wisest plan to surrender at discretion, evacuate the premises, and leave them to the salutary plundering of these marauders, who, after making a thorough clearance of all vermin, beat an orderly retreat; after this, the inmates may safely re-enter, and for some time will be freed from their former insect annoyances. When the hunter ants meet with a hollow, or a rillet of water, which affords the primary element of a bridge in a blade of grass, or any other slip, they immediately contrive a construction to cross the same in the following manner:—a few of them take a strong hold on the bank; others come forward, and are firmly held by the former by the hind legs; fresh volunteers are attached in like manner by the latter, until a sufficient number has formed a kind of chain or suspension bridge, so as to reach the opposite bank. As, however, this living bridge may have swerved from its direct course, or be slack, those which have reached the other side give a tight strain, so as to restore the original line, and render it a level floor; the bridge is also rendered stronger by fresh ants forming, as it were, two or three floorings, one over the other. It would seem that they manage, by regular reinforcements, to relieve those that have been primarily engaged in forming the bridge, without interfering with its solidity. When the whole tribe has crossed over, the bridge is broken up by a process reverse to that which had prevailed in its formation.

The parasol-ants are very common in the island, and in such numbers in some districts as to discourage cultivators. Is the parasol-ant the *Atta cephalotes* of Fabricius? I am inclined to admit this; however, it does not sting, but has strong serrated mandibles. There are three distinct species, one very small, which deserves no peculiar notice, and two others, which may be called the *dark* and the *red;* and not only do they differ in colour, but in size, their habits also being somewhat different. The dark parasol-ant is smaller, particularly the female; it prefers inhabited places, and builds its nest in walls, under the roots of trees, and among rubbish; these nests are never very large. They do not venture out, generally, during the day, but after sun-set. With great apparent cunning, when aware of any danger, they remain quite still, and sometimes drop down motionless; they seem also to be more delicate as regards the choice of their food. The red parasol-ants are larger in size; they never build in walls, but in

the high forest, and particularly in the neighbourhood of plantations: their nests look like so many mounds, some being from two to three feet high, and from twenty to thirty feet in diameter. When they have once settled in a locality they never remove, unless compelled: the nest or township is gradually increased from two or three feet, on the first settlement, to thirty feet in diameter. The parasol-ant shows a great deal of discrimination in the selection of a spot wherein to build its nest; generally, it is on the gentle slope, or near the bank of some brook. The nest is composed, according to the extent of the township, of a greater or lesser number of spherical excavations, each of them being, in general, traversed or crossed by a tree-root: they are separated from each other by a rather thick wall, and communication is effected between the different excavations or chambers by passages cut through the walls; these have access also to a larger public passage, which opens out at the lower part of the nest on the declivity. The earth dug from the excavations is accumulated on the nest, so as to give it the mound-like form already mentioned. In each of the chambers are deposited the larvæ and nymphs, in a soft, light substance of a whitish colour; this sort of bed is moulded on the excavation, and is generally laid around the root, which was probably preserved for the purpose. The female ants are also lodged in the same substance, and fresh leaves are therein deposited, undoubtedly for food for the larvæ and nymphs, and also for the females. I suppose they suck the juice of the leaves, the parenchymatous part being left to be prepared into the white substance above mentioned. Several highways diverge from the nest, branching off afterwards in the various directions which lead to the trees or localities whence they procure their food. Their dwellings are kept perfectly clean, all rubbish and dry leaves being carried away, every day, to a place of deposit, through the common passage already noticed, which may be considered as the main sewer of the township; it is about one inch high by three or four inches wide. Not far from the place of deposit is what may be termed the cemetery, to which all dead and enfeebled ants are carried and there deposited. From these details, which are too incomplete, perhaps, but which are strictly true, it is easily seen that the nests of the parasol-ants are constructed on a well devised plan. Not only is the spherical form adopted in their underground architecture the best adapted to resist pres-

sure, but thick walls are left between the chambers; a communication, as has been observed, is also established between them, with a common passage or outlet, which serves mainly for the discharge of all impurities, and so constructed as not to interfere with the regular operations of the township, or be a nuisance to the population; in case of inundation, likewise, the water is drained off through the same sewer. So much for the ingenuity and industry of the parasol-ants.

The females are nearly three-quarters of an inch long in the larger species; the labourers vary in size, from one-eighth to two-thirds of an inch. The larger ants seldom go out to forage, and in all such cases never carry their share of the provender, but they seem to act as inspectors to enforce order and rebuke laziness: their principal office, however, seems to be the protection of the township; for the moment any stranger disturbs the fortification, these garrison soldiers come out in large numbers, with their mandibles open, and ready for action.

The parasol-ants do not sting, but bite; their mandibles are like two small saws ending in a sharp point, and which serve to cut or carve out small portions of the leaves which constitute their food; in the same manner they incise the skin, so as to draw blood. These ants venture out after sunset, generally, although during rainy days they come out earlier, and in the morning also, keeping in their nest during the heat of the day. The roads which lead from the nest to the plants they attack are from four to six inches wide; all grasses are cut close to the ground, and every particle of vegetation, as also small gravel, is removed, so that the road remains clear, and perfectly free from all obstacles. Myriads of the parasol-ants traverse these roads at night in search of food; two or more trees may be attacked at the same time, and a branch-road leads to each. The parasol-ants feeds in preference on certain particular plants—as the orange tree, the manioc, the yam, the young cacao—and generally are found to select the most delicate herbage: they feed nevertheless on almost any others, whenever those they prefer are not within reach—excepting, however, strongly aromatic plants, such as the pimento, the cinnamon, &c.; they also select soft rather than coriaceous leaves, and climb to the top of high trees to get at the young and tender leaflets. When arrived at an eligible spot for foraging, they set to work immediately,

each ant selecting the margin of a leaf wherefrom to cut a portion; this it does with its mandibles, by the movement of the head, the body being motionless, so that the cut is circular. When the portion is nearly separated, it is grasped by the two first legs, and once cut out, the insect elevates it between the mandibles by one extremity, so that the whole weight of the severed leaf bears backwards, and thus proceeds with its burden homewards. Some of these cuttings are sometimes half an inch in diameter, and when, as is generally the case, in large bands, they present a most singular appearance, each insect seeming gravely to march under shelter of a parasol; hence their name of parasol-ants. A great many of the youngest ants accompany the labourers, and as many as seven I have seen clinging to the cutting of a leaf, in which manner they are carried home by their elders. In severing the leaves, many pieces are dropped from the tree, and taken up by those that are at the foot. After they have stripped a tree or plant bare, they proceed to another; but, as soon as the plant first attacked begins to send forth new shoots, they return to it, so that after it has been thus deprived of its foliage two or three times, it withers away, or becomes so much enfeebled as to be altogether unproductive. In one single night the parasol-ants will bare a tree of its foliage; and the damage they occasion is such, in some localities, as greatly to discourage the culture of yams, manioc, and other of their favourite plants. The town of Port of Spain may be said to be infested with the *dark parasol-ants*, and it is only by constant watchfulness and unceasing exertions that roses, vines, &c., can be preserved from their attacks; it is sometimes even difficult to reach them so as to insure their destruction, for they often nest in walls, and the very walls of the houses.

Various methods have been tried for destroying these enemies: poisons, fumigations, and lastly water, by way of submerging their abodes, and drowning them. Arsenic, corrosive sublimate mixed up with cassada-meal, orange-rind, &c., have been used as agents in their eradication: for one or two days they readily carry the poisonous substance to the nest, and from the effects of which many die; but they soon detect the mistake, and never touch it again. Fumigations with sulphur, or with sulphur and nitre, are perhaps the simplest means of destroying the parasol-ants. For this purpose, a sort of small furnace is

prepared—an old iron kettle being the best: a hole is made at the bottom, and the kettle turned upside down on one of the passages or openings of the township. Sulphur alone, or sulphur mixed with nitre, is placed in it with coals below, and a pair of bellows adapted for keeping up combustion: every aperture or fissure through which the smoke may escape is cemented with clay, and the fumigation then commences: it must continue at intervals for two or three days, before there can be an assurance of success. The most certain means perhaps is to dig up the nest to the foundation; and, by pouring on water, to form with the clay a batter of mortar, in which the ants are stifled and buried; but, in this case, the first requisite is a good supply of water; and to dig up a large ants' nest is not a trifle, particularly as the ants become wild when disturbed, and bite unmercifully.

Annulida.—A species of leech has been found here in ponds and brooks: it is of a dark colour, and bears a very great resemblance to the horse-leech.

Testaceæ.—It will only be necessary to mention those which are used as food, and a few terrestrial or fluviatile conchiferæ. Of the former class are oysters, mussels, and two small bivalves called here *Talourdes*, or cockles, and *Chip-chips*. Oysters are generally met with in abundance, adhering to the roots of the mangrove trees, either in small bays, or at the outlets of rivers and creeks: those taken in Scotland Bay, in the first Boca, and at the Rivers Moruga and Guataro are much esteemed, some of them being very large; but they become sweetish during the rainy season, at which time a large proportion of fresh water is mixed with the salt. Mussels are very large, and are dug from the sand or mud along the sea-shore, as also the talourdes or cockles, and the chip-chips—the latter a roseate triangular bivalve.

Amongst our terrestrial gasteropoda is a very large helix, about the size of a goose's egg: there are also several fluviatile univalve conchiferæ.

It may perhaps happen that the above details on the animals of Trinidad will be deemed by some tedious and of no practical use, whilst others will undoubtedly consider them as insignificant, and of no scientific value. To the former I answer, that such details must tend to rouse curiosity in the minds of those who may read this sketch. The latter I refer to the Appendix, where they will find a more extended notice of the grand class of Vertebrata.

CHAPTER IV.

CLIMATE—TEMPERATURE—RAINS—DISEASES.

For a long period, Trinidad has been, and is still regarded as very unhealthy; but it is really less so than many other countries similarly situated. For instance, the rate of mortality in this island is 1 per 30 inhabitants, being less than that of several large towns in Europe, viz.: Madrid, Palermo, Naples, Rome, and Vienna. But the rate of mortality is not perhaps a correct criterion of the salubrity of a country; and the greater or less prevalence of ordinary maladies, together with the proportion of the diseased to the total population, ought also to be taken into account. Now, if the salubrity of Trinidad is to be determined by this test, it must be confessed that the island stands lower than several places in which the rate of mortality is actually greater.

The climate of Trinidad is almost identical with that of the other Antilles. It is an intertropical, and, at the same time, an insular climate; that is to say, it is cooler than a continental country under the same latitude and of the same altitude, and its temperature more equal. It, however, presents the following peculiarities, when compared with the sister islands:—a total exemption from hurricanes, a greater regularity in the periodical returns of seasons, and its being but little subject to the inconveniences arising from droughts and blighting winds; the contrast between the temperature of the day and night is also, perhaps, greater—the latter being deliciously cool from December to April.

In Trinidad, as in other tropical climates, there are only two seasons—the dry, and the wet or rainy. The dry season may be said to commence with January and end with May—five months; while the rainy season sets in with June, and lasts to the middle of December. February, March, and April, are the driest months of the year. The heat of the sun is then scorching; the grass

becomes parched, the leaves of plants wither, and the smaller streams are dried up; but, after the first showers at the end of May, or the beginning of June, the face of the country is completely altered in an incredibly short time, and the vegetation looks everywhere green and luxuriant. There is seldom a sudden alteration from dry to wet, or from wet to dry: the change from the dry to the rainy season is generally characterised by a calm and close atmosphere, with occasional showers, from the middle of May to the 20th of June, at which time dark clouds begin to stretch along the horizon, accompanied by remote thunder, and soon followed by heavy rains. In July and August the rain falls in torrents; and the soil being soon saturated to the utmost, the rivers are everywhere overflowed, ravines rush foaming down the hills, the roads are in many localities almost impassable, and even plantations are frequently damaged by its violence: the rain often continues to pour for hours, whilst the crash of electricity is incessant, and almost deafening. Showers are still frequent in September, but not heavy; and from the end of that month to the 20th of October, there are generally very fine days—that short period of dry weather being called the fall, or Michaelmas summer. At the end of October, showers become more frequent, and, although not of daily occurrence, are very heavy in November. The northerly wind, which commences ordinarily in October, becomes steadier in December, veering to the East-north-east, with occasional squalls during the day, and the skies clearing almost immediately after: this change marks the transition from the wet to the dry season.

The prevailing winds, from January to June, are from East, veering to North-north-east, after sunset; and to East-south-east quarter South after nine o'clock P.M. From June to October, the winds are variable, blowing, however, from South and West-north-west. Southerly winds are always accompanied by heavy rain. In October, the wind shows a tendency to change to East and North-east, to settle at the North-north-east in November and December, and then to veer round to East-south-east.

By climate, I do not mean any astronomically defined zone or region, but the combined action of all the changes which may take place in the atmosphere and at the surface of the soil, and which actually produce, or are capable of producing, in our organs

certain permanent or only transient modifications: such as light, the amount of electric tension, and barometrical pressure, the temperature resulting from the geographical position, as also humidity, and those emanations or exhalations which are designated by the names of *effluvia*, *miasms*, or *malaria*.

Of light, I will say nothing, except that it has a powerful influence on the healthy development of vegetable and animal life, on the greater or less amount of colouring matter in the leaves of plants, and in the complexion of man.

The appreciation of the influence of electric tension on the human body is a matter of greater difficulty; but its indirect action must be powerful, since it is evidently connected with all atmospherical phenomena.

The variations of the barometrical pressure being indicative of the density of the air, and, consequently, of the mass of respirable principle therein contained, are an important element in the appreciation of climatic influence. On this point, I may remark that, between the tropics, the horary oscillations of the barometer are very regular, and present two *maxima*—at 9 or $9\frac{1}{2}$ A.M., and at $10\frac{1}{2}$ or $10\frac{3}{4}$ P.M.; and two *minima*—at 4 and $4\frac{1}{2}$ P.M., and 4 A.M. "Their regularity is so great," says Baron von Humboldt, "that in the day-time especially the hour may be ascertained from the height of the mercurial column, without an error, on the average, of more than fifteen or seventeen minutes. I have found the regularity of the ebb and flow of the aerial ocean undisturbed by storms, hurricanes, rain, and earthquakes."

Amongst the various and numerous causes which modify the mean annual temperature of the island, and all tending to its depression, the following may be taken into consideration: its insular position, its peculiar disposition into two grand sectional valleys, running east and west, between three almost parallel ridges; and the extensive woods, which covering nearly the whole of its surface, influence the temperature by acting as a shield against the direct bearing of the sun's rays by radiation, and even by augmenting the atmospherical humidity.

Two series of thermometrical observations, made at different intervals and localities, give 80° 50′ as the mean annual temperature of Trinidad; they each comprise a period of five years. In Captain Tulloch's "Statistical Report," &c., I have found the first series of observations: they were probably taken at St. James's

Barracks; the others were taken at the Royal Gaol, in Port of Spain. The results are somewhat different, as will appear in the following table:—

	AVERAGE OF FIVE YEARS. (*Capt. Tulloch.*)			AVERAGE OF 5 YEARS. (*Royal Gaol.*)		
MONTHS.	Max.	Med.	Min.	Max.	Med.	Min.
January . . .	85·50	78·50	71	86	81·80	74·40
February . . .	86	79	71	86·60	82·40	73
March	87	79	70	89	83	77·60
April	88	80	71·50	91	84·40	79·60
May	87·50	80	73	93·20	85·60	79·20
June	87	81	75	90	84·60	79
July	84	79	74·50	89·60	84·60	80
August	84·50	79·50	74	91·60	84·60	80
September . .	85	79·50	73	92	85	80·40
October . . .	84·50	79	73	90·60	85	79·60
November . . .	84	78·50	72·50	89·40	84	79
December . . .	82	77	72·50	87·80	83	76·40

Mr. Charles Deville gives as an average for four days in January, 76·82; twenty-two days in February, 76·95; seventeen days in May, 78·71; twelve days in June, 78·74. Average, 77·80.

The mean yearly temperature, according to the first series of observations, is 79°, and 84 according to the second series, which gives 81° 50′ as an average for the ten years. The *maxima* are, 88° and 93°; and the *minima*, 70° and 73° respectively. The greatest variations are, 17° and 14°, corresponding to the months of March and May. There was in February, 1853, a variation of 19°. The mean annual temperature of the neighbouring region of Venezuela varies from 77° 90′ to 81° 14′. (Codazzi.)

In the first period, the hottest months are June, May, and April; in the second, May, September, and October, and, taking the periods together, September, June, and May. The coolest months are, in the first period, December, November, and January, in the second, January, February, March, and December; and in the two periods together, December, January, and February. The months which exhibit the *maximum* of temperature, are May, April, June, and September; those showing a *minimum*, February, January, and March. The variations are greatest in February, May, and March, and least in July, June, and December; they being 14° 25′ in the former, and only 10° degrees in the latter months. The more uniform temperature of July and June is a consequence of the heavy rains which fall during those

months, and produce a refreshing action on the atmosphere: whilst the bright sun and parching breezes of March, April, and even of May, have for result an increase of temperature during the day.

There is also a *maximum* and *minimum* of daily temperature; and the following table shows these daily variations at the Royal Gaol, for a term of five years.

Table showing the variations of temperature at different periods of the day:—

Months.	Hours.				
	6 a.m.	9 a.m.	12 a.m.	3 p.m.	6 p.m.
January	78·40	82	84	82	80
February . . .	78	84	85	85	80·60
March	79	83	85	85·50	81
April	81	84	87	87·70	82
May	82	86	88	87·50	82·40
June	79	86	87	87	82
July	82	82·60	86	87	82·30
August	82	85	86	86·60	82·20
September . . .	82	85	87·50	88	82·75
October	81	85·50	87	87	82
November . . .	81	85	86	84	82
December . . .	80	84	85	85	81
Average . . .	80·45	84·32	86·12	86·00	81·69

By comparing the figures in this table, it will be found that the hour which exhibits the *minimum* variation is 6 P.M., and that which presents the *maximum*, 3 P.M. Now, although the temperature is two degrees lower at 9 A.M. than at noon and 3 P.M., it may yet be affirmed that the heat is excessive from that hour to 4 P.M. The above table shows, also, that the increase is more gradual than the decrease of temperature,—the former being 5° 67′, within six hours, viz., from 6 in the morning to 12 at noon; and the latter, 4° 31′, within three hours, viz.: from 3 to 6 P.M. The mean temperature in the sun may be estimated at 124°.

The thermometer, however, gives neither a fair indication of the sensation felt by, nor of the impression made upon, the human frame by a high temperature. They both depend greatly on the rarefaction of the air, and the hygrometric state of the atmosphere; so that the sensation of oppression, and the general prostration caused by a high temperature, are increased by sultry weather, and rendered more painful than when the air is comparatively

dry, pure, and agitated. The influence of winds, in connection with the temperature, is very remarkable. The northerly wind, even when light, being piercingly cold, and producing an unpleasant feeling of chill; whereas the easterly breeze, however strong, never produces that sensation: on the contrary, it is agreeably cool and refreshing, and may be said to possess a bracing tendency.

The southerly wind has a depressing effect; still more so the westerly, which has previously swept over the neighbouring plains or *llanos* of Venezuela.

Humidity.—The influence of atmospheric moisture on vegetable life is too well known to require any comment. Its influence on our own organs is, perhaps, as powerful, though less apparent. Temperature, atmospheric pressure, the prevailing winds, and the condition of a country—whether as cultivated, or as still covered with forests—all these greatly influence the actual quantity of moisture contained in the atmosphere.

I am not in possession of such hygrometric observations as would enable me to give any decided information on the subject; but the quantity of rain which falls, throughout the year, may serve as a test for appreciating the humidity of our climate. It will be seen, from the table annexed to this chapter, that such quantity may be estimated at 70 inches 30 hundredths per annum. It is compiled from observations published by Captain Tulloch, in his "Statistical Report," viz., for the years 1825, 1826, and 1827; from those by Dr. J. Davy, in his work on the West Indies, viz., for the years 1847 to 1852 inclusive, and taken at the St. James's Barracks; as also, from observations made at the Royal Gaol, Port of Spain, from 1850 to 1854 inclusive (*vide* Table).

An apparent difference will be found between the quantity of rain which fell during the same month of 1850, 1851, and 1852, at the St. James's Barracks, and of that at the Royal Gaol; the average, however, may be received as nearly the same—it being 70·75 and 70·46 inches respectively.

The months which exhibit a *minimum* of rain, are March, February, and January; and those wherein the *maximum* quantity falls, are August, July, and June. The annual average quantity is 70·30 inches. It would appear, from six years' observation by Ramon de la Layra, that the mean annual quantity of rain which falls at Havanna, is 109 inches; it is 72 inches on the north coast

of Venezuela (Codazzi); from 115 to 128 in Hindostan, near the coast (Humboldt); in Paris, it was found, by Arago, to be 20 inches; in London, by Howard, 25; in Geneva, 30·50 inches (Humboldt). During the first six months of the present year, 1855, the fall of rain was heavy, viz., 46 inches.

By taking separately the first five months of the year allotted to the dry season, and the last seven months which comprise the wet, we have the following results:—2·52 inches per month during the former season; and 11·33 during the latter. We may therefore conclude that June, July, August, September, October, November, and December are very humid, and the climate generally damp: however, it is less so than these of Havanna, Hindostan, and even the north coast of Venezuela. The greatest quantity of rain which fell during any month, pending the period of thirteen years, was 16·81 inches, viz., in August, 1851.

I have already stated that the aforesaid physical agencies—but particularly light, heat, and humidity—exercised the greatest influence on animal as well as vegetable life; I will now briefly examine their influences on our own organs.

Heat.—Besides its well-known debilitating effect on the human body, a high temperature seems to have a powerful action in modifying certain functions. Under such temperature, the cerebral activity is diminished, as well as the muscular power, and the digestive organs are greatly enfeebled. Cutaneous exhalation is much increased, and becomes apparent under the form of perspiration; in fact, it is brought to its *summum* in a warm and damp atmosphere. Perspiration has, for effect, a diminution of the quantity of heat produced in the human body by natural processes—nor does it act as a debilitating cause, to the extent that is generally supposed; for prostration of strength is relieved by an abundant natural perspiration, and its increase, when the air is not too damp, results in a counteraction of the effects of a high temperature. I may adduce, as a proof of what I advance, that individuals in robust health are generally those who perspire the most. It is a principle in physiology, that the greater the activity of an organ the more liable it becomes to disease; and, as a consequence, cutaneous affections must be more frequent and serious in a warm than in a temperate climate.

Humidity.—Warm air contains, even when comparatively dry, a larger contingent of water than cold damp air. This aqueous

admixture increases the volume of air, and diminishes its specific gravity; as an inference, warm damp air contains less of the respirable element than any other. The warmer the atmosphere the larger the quantity of water which it can hold in suspension. A damp atmosphere—the temperature being equal, or even greater—produces a peculiar feeling of chill, widely differing from the bracing effect caused by a cold, dry air. The sensation produced by the former is keener, and seems to penetrate the whole system, thereby producing chilliness and involuntary shivering from within, with a bluish paleness externally; in fact, a damp atmosphere acts by diminishing the power of producing heat, and the symptoms evinced very much resemble those of an incipient attack of intermittent fever.

The influence of a damp, warm atmosphere on the various functions is still more distinctly observable than that of a dry, warm air. The proportion of the colouring matter decreases in the blood, thereby showing that hematosis is modified by humidity. As a result of these modifications of the blood, the different organs are variously affected, and, among others, the stomach: its digestive power is weakened, and, generally, a lesser proportion of food is required to satisfy the appetite—gentle stimulants and tonics then become necessary.

The hepatic secretion is much diminished, and the quantity of bile secreted may not only become insufficient for the process of healthy digestion, but even its very quality may become so much altered as to constitute a pathological state. As a consequence of the alterations caused in hematosis, and the digestive functions, nutrition becomes impaired.

The glandular system is, also, particularly modified, its activity is much increased, and individuals, having lived for a certain period in a damp locality, may be said to be placed under the same conditions as those who are of a lymphatic temperament. If, together with these natural coincidents, are combined those of insufficient non-animal diet, bad lodgings, and the appurtenances of filth, the consequences speedily become apparent: inflammation of the lymphatic glands and vessels, ulcers, chronic exema, and even leprosy, according to individual constitution, must be the deplorable results.

Light.—It is not very easy to obtain practical information as to the influence on man of this physical agent, when considered

separately from air and heat; but we are warranted in concluding, analogically, from its effects on the healthy growth of plants, and the metamorphoses of batracians, that it must materially influence certain functions. I do not, therefore, hesitate to affirm, that the evil effects of confinement, in dark rooms or dwellings, must be partly attributed to the absence or want of light; whilst to the presence of that agent may be partly traced the beneficial results of exercise in the open air, particularly in the case of those who have the misfortune of being born with a lymphatic temperament.

Besides the general influence exercised on the human frame by a high temperature, combined with humidity, there may exist in the air certain substances which, in the form of miasmatic emanations, exercise a most material agency in the development of maladies, and towards the salubrity of a country.

A warm, damp atmosphere is the condition naturally most favourable to the decomposition of organic substances, either animal or vegetable; and as the gaseous exhalations evolved from such decompositions are more readily held in suspension in such an atmosphere, it may be considered, where suitable affinities exist, as highly predisposing to very serious diseases, and especially to the almost innumerable series of periodical affections.

Emanations arising from the decomposition of vegetable matters are particularly noxious; and yet, when they are allowed to decay in a dry air, they do not disengage any deleterious principles. In order to generate those principles, they must undergo the process of decay in stagnant water, thus forming swamps. Swamp-water is, generally, fetid; but fetidity is no positive mark of the deleterious qualities of a swamp.

Swamps or marshes are created by collections of standing water, either fresh or salt; it may be said, however, that purely salt-water marshes do not exist, since they are almost invariably formed by an admixture of fresh with salt water. The latter are much more dangerous than merely fresh or salt water swamps, whereas this admixture has for result to aid in the decomposition of the organic matters contained in both.

The following are the conditions necessary for the formation of swamp effluvia: a damp, warm air, the ground neither too dry nor too deeply covered with water. Hence the atmosphere of these watery tracts always contains more or less of moisture, but more during the night than the day; it also holds in suspension,

during the former period, certain substances which do not seem to exist therein during the latter, so that the disengagement, or at least the condensation, of marsh emanations is less during the day, and greater at night, but particularly at sunset and sunrise. Their chemical nature has not yet been ascertained by analysis; however, they have been found to contain ammoniacal components, and, therefore, must be of an organic or vegeto-animal nature. No doubt their mode of operating is complex; but in order to account for the identical effects produced by the atmosphere of swampy places, and from the consideration of the processes of vegeto-animal decay which are uninterruptedly going on in such localities, we are led to admit that they give rise to certain noxious principles, which we call *effluvia*, *miasma*, and *malaria*. Now, are these substances the elements of the noxious influence of swamps? This would appear to be highly probable.

The specific gravity of effluvia seems to be greater than that of pure air, for they do not spread beyond a certain height. It would seem, also, that they are soluble in the globular moisture, actually saturating the air, so that they become condensated by coolness of the night, and fall with the dew—the popular dread of dew-damps being proved thereby to be well founded.

Local circumstances may greatly influence the condensation of effluvia; for instance, whenever a swamp exists in a deep valley, abuts on a hill or mountain, or is skirted by forests, the miasmas evolving therefrom are likely to accumulate in the locality. The direction of variable or prevailing winds, also, aids materially in the spreading of malaria, and may thus modify the salubrity of a whole district.

Hills, mountains, and forests, may therefore act as a protection against, or, on the contrary, as an aggravation of the noxious influence of a swamp, according as it is situated to the leeward or windward of the tract. In fact, it often happens that the miasmatic influence is almost *null* in the locality of the swamp itself, whilst it becomes very noxious at a certain distance, particularly whenever any barrier obtrudes in the shape of hills and mountains to the leeward. Localities to the windward are comparatively exempt and safe.

The formation of effluvia is more abundant when a larger section of a marsh remains uncovered, or exposed to the direct action of the solar rays; so that, in our island, the deleterious influence

of most of our swamps is materially tempered during the rainy season, when their ground surface is overflowed by pluvial waters.

It has been assumed, that miasma is constantly disengaging from forest lands. I admit the fact with restriction; for this occurs only—or at least in any appreciable degree—where the ground is low and subject to inundation.

Nearly the whole surface of Trinidad may be said to be covered with virgin forests; many swamps, formed by an admixture of fresh with salt water, exist all along the island shores, particularly on the western coast; the average quantity of rain which falls throughout the year may be estimated at seventy inches; the mean annual temperature is 81°. The climate may thus be classed as at the same time humid and warm, and, consequently, highly debilitating; certain precautions, therefore, become necessary to counteract the effects of such a temperature on the general constitution.

Persons coming to Trinidad may avoid, to a certain extent, the diseases resulting from the climate, and become acclimatised or *seasoned*, as it is called, by submitting to a few rules deducible from the foregoing considerations. The climate being both warm and humid, such rules must be a combination of those which are respectively applicable to a warm, and to a humid climate.

Diet.—It is, in my opinion, of great importance that no preconceived system with respect to diet should be assumed or enforced; and I regard as a great mistake, the adoption of and submission to certain theoretical dietetic prescriptions, without due preparation or gradual transition. The best plan is, as far as practicable, to follow one's previous regimen, if found to have agreed with the constitution, and, by degrees, to substitute those changes or modifications which observation may suggest, or experience sanction.

The almost exclusive use of vegetable food is, by some hygienists, strongly recommended to persons inhabiting a warm climate. Such a diet may suit an *exclusively warm* climate, and be acceptable to those individuals who spend their time in the *dolce far niente*, and enjoy a long *siesta* during the mid-day heat; but individuals living in damp localities, and leading an active life, would soon become enfeebled and invalided by indulging in a purely vegetable diet. In such a climate, and with such habits, I consider the use of animal food, and particularly of fresh meat,

as even amounting to a necessity. This observation is also applicable to the inconsiderate use of fruits, encouraged by the same parties; not that I consider fruits, in their own nature, unwholesome; for the poorest classes here, at certain seasons of the year, live almost exclusively on mangoes, avocade pears, oranges, and cashews; and that, at least, without apparent ill effects. I am, on the contrary, therefore, inclined to encourage the moderate use of the cooling produce of the orchard, when maturely ripened. But the indiscriminate and immoderate use of fruits would soon produce its debilitating effects on the digestive organs; neither should the use of spices be indulged in habitually, except, perhaps, that of black pepper in swampy localities.

Whenever wholesome spring water can be got, it is by far the best drink; but this, as also rain water, ought always to be filtered, and the latter rendered more digestible by the addition of a little wine or spirit. Generally speaking, water only, or wine and water, ought to form the basis of common drink; pure wine or spirit is to be allowed only in exceptional cases, and when the body has been chilled by exposure to wet or cold damps. Beer and porter, however, form a wholesome beverage, particularly in swampy places. As a general rule, no fermented liquors should be taken in the intervals of meals; and the custom of passing wine after dinner, ought to be discountenanced by all persons having pretensions to sobriety. I may boldly decry this as a faulty habit, inasmuch as it tends to accustom individuals to the immoderate use of fermented liquors. By the abuse or even the incautious use of such, the digestive organs, and the stomach especially, soon become deranged; a craving for drink, and repugnance to food, are the first symptoms; disturbed sleep and retching in the morning soon follow, as also general dyspepsia. Meanwhile, the liver becomes affected, together with the nervous system—a step further, *delirium tremens* supervenes as a complication, and, as a sequel, intellectual prostration and moral degradation; finally, a miserable death closes the scene.

Violent exercise immediately before meals is injurious. Muscular action causing a diversion of the blood and nervous energy to the limbs and the surface generally; if any quantity of food be received ere equilibrium be restored, the stomach is then taken at a disadvantage; as a rule, therefore, at least half an hour's rest should be allowed before partaking of food. Again, imme-

diately after meals, the digestive functions are in the highest degree of activity; all perturbing causes should then be carefully avoided, and only gentle exercise indulged in.

Fatigue of whatever kind, and especially from 10 A.M. to 3 P.M., is injurious, and may bring on fever, which generally takes the adynamic form; but regular exercise is absolutely necessary. Persons who lead a life of general physical inaction, soon find that their appetite decreases, whilst their sensibility increases to a morbid extent: they become debilitated, and subject to nervous affections, and, if otherwise of a nervous temperament, highly excitable, and even hypochondriacal. When these individuals come to the determination of regularly taking foot or horse exercise, they gain by degrees a better and more regular appetite; the nervous symptoms subside, ultimately to disappear.

Moderation in eating, drinking (as also in the use of stimulants), and exercise, form the great secret for perserving health in Trinidad. Two meals per diem are sufficient; something, however, must be taken early in the morning, such as chocolate, tea, or coffee, particularly in marshy localities; neither would I object to chocolate or tea at night after an early dinner. Regularity in the hours of meals is also of paramount importance.

Attention ought likewise to be paid to clothing, in the materials of which thick cotton should be preferred to linen; it answers admirably as an under-shirt. Cotton is no good conductor of caloric, and is particularly useful in retaining perspiration within proper limits; it is also preferable to flannel, which is heavy and irritates the skin. In our climate, indeed, cotton is fully as good a protective as woollens, since in the system is required not so much the preservation of warmth as the prevention of cold; for it is most essential that perspiration should not be checked.

The cold bath has for effect to diminish the temperature of the body by a merely physical action, but it is also one of the best cooling agents, as it, at the same time, diminishes the power productive of heat. Cold bathing, therefore, must be highly beneficial; but it ought to be of short duration—a few minutes only; and persons who are in a position to do so should bathe every day, since experience has proved that such practice is an almost sure guarantee of sound good health.

During sleep perspiration is augmented, though, at the same

time, the power of producing heat is diminished; as a consequence there is less reaction against physical agents, and a greater risk of being assailed by disease. It is, therefore, very imprudent to sleep with open windows, or, at least, with such as admit a current of air to pass over the sleeping body. And yet this is a practice generally followed, with a view to enjoying the cool of the night. Sleeping in the open air has not the same ill effects.

Besides these general rules, there are others which are specially applicable to persons living within the limits of marshy places. The effluvia arising from such localities exercise their influence on the natives as well as strangers; and the suggestions I am about to offer are intended for both classes of persons.

Any individual dwelling near a marsh ought to make use of animal food, drink beer and porter, or spirits and water in the proportion of one pint of the former and thirty of the latter: the water should be filtered through charcoal. If engaged in rural avocations, before going out in the morning he should take some strong coffee, chocolate, or tea, with a little bread; in fact, he ought never to commence his labours with an empty stomach. Again, he should not venture out at an early hour when the dew is still abundant on the field, or during rain, unless dressed in coarse woollen garments, say serge trowsers and a flannel jacket; both should be made large. He should not follow the practice of wearing socks, and, on coming home—even for a short time—he should change his wet for dry shoes. If possible, he should avoid exposure to the action of effluvia either at sunrise or sunset, as they condense at night and seem to evolve or disperse with renewed energy in the morning; and, as the human frame is more liable to be acted upon during slumber, all outer entrances to dwellings ought to be closed before sunset, and re-opened some time after sunrise—particularly those of the sleeping-room; screens made of canvas, or metallic sheets, should be also placed at the draughts of doors and windows, as a protection against the introduction of miasma.

Individuals should be very careful in protecting themselves against humidity, for I have come to the conclusion that this is one of the most active causes of disease. It is humidity, and not heat, which may be said to be productive of fever. Yellow fever generally prevails during the rainy season, as also dysentery.

Many localities, under the same latitude, which enjoy the privilege of a dry atmosphere, are salubrious: such are, for instance, Cumana and the Island of Margarita, both of which enjoy a very dry though warm climate; such are, also, the islets in the Gulf of Paria. The Portuguese, and other white immigrants, have no objection to field-work during the heat of the day; but they have much dread of rain, and of humidity generally. They all agree in saying, "that the sun will not cause fever, whilst rain invariably does so."

In order, therefore, to allow of a free and speedy drainage, houses should be built on a gentle elevation; whilst carefully made and well-paved gutters should carry off the surplus water. Dwelling-houses should be raised on brick or stone pillars to give free access to a current of air beneath the flooring, and means of ventilation provided by a sufficient number of windows and of ventilators in the upper part of the apartments. The sleeping-rooms should be as large as possible; and, finally, it is very important that houses should be protected on the marsh side by a plantation of trees, always, however, at a certain distance from the dwellings: bamboos would answer admirably.

As may have been anticipated from the above remarks, Trinidad is mainly subject to those diseases which belong to a warm damp climate, viz., to fevers and dysenteries; these are, in fact, the most prevalent maladies; and the observation made by Annesley, that two-thirds of the deaths in tropical regions are caused by the effects of marsh effluvia, is fully borne out in Trinidad.

Remittent and intermittent fevers attack all classes; the female sex and the aged, however, are less subject to them; they are particularly prevalent amongst children—convulsions being one of the most common symptoms in severe cases.

Europeans and unacclimatised persons, as well as children, are commonly attacked with the remittent, and native adults with the intermittent type. Congestions of the different organs, but mainly abdominal plethora, accompany remittent fevers: these may under unfavourable conditions terminate in black vomit,—thus showing the great analogy, almost the identity of nature, in the remittent and yellow fevers. And though Trinidad is, perhaps, more subject to remittent fever than the Great Antilles, Vera Cruz, and New Orleans, yet yellow fever—that plague of

the west, which may be said to be epidemic in some of the above-mentioned places—visits our shores only at long intervals, and with little effect. The mortality from that cause has been particularly insignificant among seamen. The most frequent types of remittent fevers are the *bilious*, *double quotidian*, and *double tertian*, which latter often terminates in the intermittent.

The most common types of intermittent fevers are, the *quotidian*, *double tertian*, and *tertian*: the *quartan* is of very rare occurrence, but the *octan* and the *quinquedecimal* forms are rather frequent. The return of the latter types coinciding generally with certain changes of the moon, many have been induced to ascribe an influence to that planet as connected with the return of this fever.

Periodical fevers, either remittent or intermittent, are in certain places endemic throughout the whole year; regular epidemical *recrudescences*, however, occur at certain periods—generally at a change of season. The localities most liable to fever are those skirting the sea, or lying to the leeward of swamps; the interior districts may be said to enjoy comparative immunity from periodical fevers, and the occasional cases which there occur may, in general, be traced to some direct cause. Though the harbour of Port of Spain is to the leeward of the great Caroni swamp, the shipping, nevertheless, is almost exempt from fever; this is attributable to the fact, that no barrier exists to leeward in the shape of land, either level or elevated; and the effluvia are thus carried away several miles westward before any such obstruction intervenes.

Individuals inhabiting a salubrious locality are almost certainly attacked with remittent fever by resorting, even for a short period, to a swampy spot; should they stay there a few days only, fever will often declare itself even after a return to their former place of residence. It then, generally, terminates in the octan or quinquedecimal form, and may last for months; a change of air and sea-bathing are, sometimes, the only remedies.

Persons living in marshy districts are very liable to an attack of remittent fever by removal to a healthier locality. Intermittent, but remittent fevers particularly, when not attended to in time, or not properly treated, may end in malignant fever, generally in the apoplectic or algid form; this commonly happens from the third to the fifth day; it sometimes, however, exhibits the malignant cha-

racter at the very first onset. Intermittent fever is often *masked* —the neuralgic form being the most frequent. The appearance of pain—sometimes very severe—in a limb, or any other part of the body, preceded or accompanied by cold hands and feet, or even by regular ague, and followed by either a gentle or profuse perspiration—after three, six, twelve, or more hours' duration—and a complete remission of the predominant symptoms, are sure indications of the nature of the complaint. Quinine is the surest, if not the sole remedy. It has been said of verminous affections that they are Proteus-like; but remittent and intermittent fevers are the real Protean malady.

Dysentery.—Next to fever, dysentery is the most prevalent disease in Trinidad; it is even endemic in a few localities which are otherwise regarded as healthy. Every six or eight years, however, there are returns of epidemic dysentery. The disease commonly begins at the commencement of the wet season, viz., in July and August, and lasts for several months; so that atmospheric moisture seems to have an undeniable influence on the production of dysentery.

It has also been remarked that, in those localities wherein dysentery is endemic, there is always a coincidence between the breaking out of the distemper, and the overflow of rivers, after the first heavy showers. This is mainly apparent in our valleys and such other districts as are covered with high woods.

Dysentery may appear under four different forms, constituting, as it were, four distinct species, and having different seats:—the *mucous* or *gastric*, in which the stomach, and the *bilious* or *hepatic*, in which the liver, evidently participates; the *inflammatory*, which seems to attack the whole of the intestinal tube; and the *putrid*, or *adynamic*, known here by the name of *Bicho*, which has its seat in the *rectum* and *descending colon*. Each variety of this malady requires a different treatment: chronic dysentery also is not unfrequent.

Dysentery attacks all classes and ages; the Europeans and the foreign whites are, however, far less subject to it than the natives and the coloured class. This may be attributed to the different mode of living of the two classes. Europeans and other whites, generally, enjoy more comforts, are better lodged and fed, and more cleanly in their habits; besides which, they are not so much exposed as the coloured people.

Eruptive fevers—viz., measles, small-pox, and scarlatina—reign, epidemically, every six or ten years; scarlatina less frequently than small-pox, and small-pox less again than measles. Measles and scarlatina are not so dangerous as in Europe, the convalescence, particularly, requiring less attention and caution. Small-pox has proved very fatal on various occasions, and it is much to be deplored that vaccination is not rendered compulsory, and that provision is not made for its extension to the rural districts—Port-of-Spain and San Fernando alone being provided with a public vaccine institution. Vaccination may not infallibly act as a preventive, but it invariably modifies the characteristics of the eruption to such an extent, as to render it comparatively harmless. The majority of children in the country are not vaccinated; and not only are they more exposed thereby, but they may also become instrumental in spreading the contagion and endangering the public health.

Hooping-cough is of frequent occurrence, but not dangerous, except when neglected, or accompanied with *bronchitis*. The latter affection, but particularly *laryngitis* and *tracheitis*, become very common during the season in which the chill northerly winds prevail. It is very doubtful whether *croup*, or *angina membranacea*, really exists in the island; for what is termed croup here is either *angina stridulosa*, or *angina œdematosa*, both of which simulate croup. *Angina œdematosa* almost invariably commences under the form of an inflammation of the *pharynx*, which afterwards extends to the *glottis*.

Sore-throat is one of the most frequent, and may also be reckoned one of the serious diseases which prevail in Trinidad. The purely inflammatory and the *pseudo-membranous*, or *diphterite* forms are rare. The œdematous variety, on the contrary, is very common, and, by the extension of the œdema to the glottis, may prove fatal within a few hours. There exists also a peculiar form of sore-throat, or *pharyngitis*, which may be termed *remitteut pharyngitis;* the sufferer feels comparatively easy during the day, but an exacerbation invariably takes place during the night, most distressing at about ten or eleven o'clock. If overlooked or not properly treated, it may terminate fatally, especially in young children. Quinine is the remedy, and to it the disease yields very readily.

Pneumonia and *pleuritis* are of comparatively rare occurrence; and exposure to a draught of air, or cold bathing, the body being

warm, will rather cause an attack of bilious remittent fever than an inflammation either of the lungs or the pleura. Consumption is no uncommon malady; it comes to a fatal termination with great rapidity.

Ophthalmia, and the inflammation of the *cornea* in particular, is rather frequent; its apparent cause is cold, for it generally occurs during the dry season, and after exposure to the chill and damps of night.

Hepatitis, and other liver complaints, are rather prevailing, and abscesses of that organ are often the consequence. Dr. Clarke, an army surgeon, and a resident for many years in the different West India Islands, tells me that he has found hepatitis more prevalent in Trinidad than in any of the other islands. A sort of *atrophy* of that organ is also a common disease; the result is, a diminution in the quantity, with an alteration of the quality, of the bile, and a consequent diarrhœa, which may be said to be incurable.

Of all inflammations, however, the most frequent is that of the *lymphatic glands* and *vessels;* it often terminates in *elephantiasis*, or in suppuration.

Ulcers, particularly of the legs and feet, are a disgustingly common sight; they attack almost exclusively those who travel or labour, as many of the lower classes do, with bare feet or legs, but they may also generally and justly be considered as the consequence of neglect and filthiness. They are also frequently caused by certain insects, viz., *chigoes* and *bêtes-rouges*. The latter, almost invisibly small, attack the legs, their bite producing much itching and cutaneous irritation; the former penetrate into the toes, heels, and soles of the feet, causing also an itching sensation, and, if not extracted in time, produce, first, a very small ulcer, which soon increases by its own extension, or the formation of fresh ones, so as almost to honeycomb the edges and surface of the sole. By constant irritation and exposure, they assume an unhealthy appearance, the bones by degrees become diseased, whilst the inflammation sometimes extends to the whole foot; at this stage amputation is found to be the only remedy. These ulcers are generally of difficult cure. Newly imported Africans and Coolies, and even the native labourers, are particularly liable to them.

Leprosy is, unfortunately, very prevalent, and, of late years, appears to be even on the increase. There are two distinct species of that cruel and loathsome malady here, the *anesthesic* or *dry*

form, and the *tubercular*. The primary apparent symptom of anesthesic leprosy is a weakness of the extensor muscles of both the upper and lower extremities: as a consequence, a feebleness, when walking, is then ordinarily experienced in one foot, sometimes in both: the fingers gradually curve inwards to the palm of the hand, with an accompaniment of numbness in those particular parts above mentioned. Any individual exhibiting these symptoms is *doomed*. The first symptom of the tubercular form is a discoloration of the skin of the face, together with the appearance of blotches on the loins and on the posterior part of the thighs; these are soon followed by a swelling of the fingers.

Both species of leprosy are, in my opinion, but a peculiar form of *scrofula*, which, under the influence of a warm and damp climate, takes the form of a cutaneous affection, whilst in colder regions it assumes that of pulmonary phthisis. Not only is leprosy hereditary, but, like consumption, it is incurable. The remark has also been made that seldom are there not instances of consumption in those families in which cases of leprosy have occurred. It is a popular opinion that venereal affections may have an influence in developing leprosy; and let me say that this opinion is rational, since those affections are well known to have a marked action on the glandular, osseous, and cutaneous systems.

It is much to be apprehended that the malady will continue to spread, and thereby entail an increasing amount of misery. Parents should, therefore, be awakened to the necessity of checking all predispositions to the lymphatic temperament, by strict attention to food, habitation, cleanliness, and exercise in the open air.

An asylum was established under the government of Sir Henry G. M'Leod, and is still maintained at the public expense, for the reception of lepers who are not in a position to support themselves. But as it is generally left to their option to enter the asylum or not, those only who make application are admitted, and, of course, lepers, who prefer a mendicant life, are seen going their rounds and begging, not only on the highways, but in the very streets of Port-of-Spain. Surely this ought not to be tolerated.

Lunacy prevails to a very great extent. There are now in the Lunatic Asylum, at the Royal Gaol, twenty four unfortunate subjects. The slow but continued action of moral causes, and habitual drunkenness, seem to be the determining causes of lunacy. I have remarked, in the case of females, that jealousy and re-

ligious enthusiasm are the predisposing agents towards this terrible malady; in many instances, it terminates in confirmed idiocy, as if the cerebral organ had given way and broken down, under the pressure of too powerful a stimulus.

There is in Trinidad—to its shame be it said—no lunatic asylum, where a cure may be attempted of the unfortunate sufferers; they are confined in a separate building within the Gaol court, and there kept prisoners with a view only to the prevention of mischief; this is necessary, undoubtedly—but this is no curative, and is, under every respect, most cruel.

I will conclude this notice of the principal diseases of the island, by the following remark. Nearly all the diseases, in Trinidad—no matter what may be the nature of the complaint—have a tendency to assume the remittent or intermittent form, as a complication.

Intermittent sore-throat and dysentery are very common, and remittent pneumonia is not rare. An individual accidently confined to the sick room—for instance, from a broken leg or any other cause—is almost certain to get an attack of intermittent fever after having been laid up for two or three weeks. Quinine, combined with some other co-efficient medicines, is a certain cure.

I may say, in addition, that *sporadic* cases of disease are the exception, whilst the *epidemic* form the rule. It is evident that the latter type is determined by the existence of certain conditions which we cannot always discover or fully appreciate; but which, nevertheless, become apparent in the uniformity of their pathological effects. These conditions may subsist for a shorter or longer period; but, during the whole time of their persistence, prevalent diseases undergo some uniform modification, and also exhibit a few characteristic and identical symptoms which cause them to bear a sort of resemblance to each other, and for the cure of which the same treatment is generally successful, although otherwise the diseases may be of a different nature. And not only do these conditions vary at long intervals, but sometimes more than once in the same year; so that the treatment which has been most successful against fever in the commencement of the year, will not be so effectual at a later period.

The pathological phenomena exhibited in Trinidad are highly illustrative of the doctrine of *medical constitutions*, so admirably

advocated by Hippocrates among the ancients, and by Sydenham, as well as others among the moderns.

Connected with this subject is the question of medical assistance and hospital relief, on which I propose offering a few remarks.

The practice of medicine is, in the rural districts a laborious and wearisome occupation, requiring an unusual degree of strength and stamina; and unless some cogent inducement is offered to the medical man to settle in the couutry, he will always—and that naturally—give preference to the towns. But except a few proprietors or managers, who are willing to engage the services of a medical man for themselves and families, or for indentured labourers, very few are prepared, or even willing, to pay for his assistance. As a consequence there are now only four medical men practising in the rural districts; the others being resident in Port-of-Spain, San Fernando, and St. Joseph. "The effects of such a partial distribution," says Dr. J. Davy, "it need hardly be remarked, concern the interests of society generally, and is one of the great drawbacks to settling in a new country, especially where slave labour is excluded." Several young men of the faculty have already retired from the colony in search of a more profitable field; should those who remain die or retire also, there is no chance of their being replaced.

Immediately after, and on several occasions since emancipation, attempts were made for securing medical aid to the class of artisans in towns, of labourers located on estates, and of small settlers generally, on their contributing the small sum of ten cents per week for each working person—children and old people being attended gratuitously; incredible, however, as it may appear, these attempts have invariably failed. After a few weeks, or two or three months at the utmost, such of the subscribers who had not been subject to any attack during that period withdrew their subscription, on the pretext that it was not fair they should pay for the doctor whilst they enjoyed good health. But these very people, when ailing, are unwilling, and in most cases unable, to pay the fee; and they then throw themselves into the hands of male and female quacks, or *obeah* practisers, who bleed, cup, prescribe *nostrums*, and give their own personal attendance, exacting more or less from their dupes, according to their own *status* or reputation in quackery or obeahism. They are punctually paid—chiefly from a superstitious dread infused into the minds of

their patients—but always retire in time from any unprofitable field. How many accidents occur, how many lives are lost, in consequence of this perverse neglect! As regards midwives, matters are still worse; for not only do they indulge in the most silly and disgusting manœuvres in ordinary instances, but they have recourse to most abominable practices—(such as flogging, suspension, &c.,) in protracted cases of accouchment, the child, or mother, or both, being, but too often, the untimely victims of those self-confident *commères*. Their directions, regarding the management of infants, are barbarous in the extreme.

There is a provision in the Medical Ordinance, that no one shall practice as a midwife, in Port-of-Spain, without a license granted by the Medical Board; and, in the rural districts, without a certificate signed by the medical practitioner of the locality; but as the enforcement of the law is left to the midwives already licensed, and to the members of the profession, with the view only of affording them an opportunity of protecting their own interest, that wise proviso remains unexecuted. Surely the government ought to interfere, if merely for the sake of the public welfare.

As to hospitals, nothing can be less creditable than the establishment at present existing in Port-of-Spain and San Fernando; but, as the buildings were never intended for hospitals, I will say nothing of their accommodations. As to administration, everything is placed under, and left to, the management of the house-surgeon, who is, at the same time, surgeon, physician, and manager. He prescribes for the patients, sends requisitions for medicines, food, and other articles, which must be approved by the Colonial Secretary: there was once a committee of management, but it is now either *defunct*, or, at least, it has ceased to act. The surgeon, in Port-of-Spain, receives £400 sterling per annum, with a regular supply of bread and wine. Of course, the appointment is one of the best in the gift of government, and to obtain it, the applicant must be a favourite. This is proved by the nomination of the present house-surgeon, who was comfortably *housed* in the snug berth, irrespective of claims and qualifications, and merely because he happened to be the *protégé* of the Colonial Secretary. Dr. M——, the present holder of office, arrived in Trinidad with a view to the adoption of the planting business. After a few years of unsuccessful apprenticeship, as overseer, he altogether abandoned agricultural pursuits, to become, in 1849,

dispenser at the Coolie hospital, recently established in San Fernando. He was next—in January, 1850—selected to superintend the Coolie asylum of Port-of-Spain, under the control of the then house-surgeon, Dr. Ch. P., and employed, at the same time, as dispenser at the Leper Asylum. There he acted for two years and a half, and then left for Europe, on leave, in August, 1852: after an absence of eleven months, he returned to the island, with a diploma of M.D., from *Aberdeen*, to resume his duties at the Coolie asylum, *which was forthwith rendered an independent establishment.* About this time, Dr. Ch. P., the surgeon of the colonial hospital, was pressed to take a leave of absence for the benefit of his health; Dr. M. was appointed his *locum tenens*, and *the Coolie hospital done away with.* On his return from Grenada, and before the expiration of his *congé*, Dr. P. was prevailed upon to send in his resignation, and, *the very next day*, Dr. M. appointed to fill the situation. This nomination was sent home for approval, three days after by the packet; and thus were defeated the claims of several who had applied for the situation, at a former period, as also of those who had intended to make application on the present occasion—several of them better qualified, and all having better claims than the Colonial Secretary's favourite.

The hospital staff consists of a visiting physician, the house-surgeon, a dispenser, and a clerk selected by the house-surgeon.

No patients are admitted into the hospital unless some party is responsible for the charge of one shilling per diem, which the poor inhabitant of the island is obliged to contribute; two shillings are exacted for sailors or other foreign invalids.

It is really surprising that a convenient hospital has not yet been erected in Port-of-Spain for the reception of the sick poor; and the more so, as a special fund had been gradually accumulating for the purpose. The fund amounts at present to the sum of £10,261 15s., as appears by the published "State of the Colonial Treasury, on 31st December, 1854"—"Balance remaining of the old legacy duty appropriated to the building of a hospital, in Port-of-Spain, £10,261 15s."

That sum must have been expended, or rather thrown away; for, the stones, bricks, lime, and sand that were some four months ago carted to the spot on which the hospital is to be erected, have since lain there, exposed to be damaged by the heavy rains, or

stolen by enterprising parties for private use; in fact nothing has been done—because, forsooth, the colonial chest is empty.

The Medical Board, the only competent authority, was, I believe, never consulted concerning the general plan and accommodations of the proposed hospital; and we may expect it will be constructed upon the plan of some such English building, and without regard to the exigencies of the climate.

It was once proposed, and it is still considered as feasible, that each ward should have its own hospital. Such a proposition must have emanated from, as it can only be entertained by, persons who never reflected for one moment on the position of the island, and the necessary expenses consequent on the formation of an hospital, on however limited a scale. Besides bedsteads, bedding, cloth, and other requisites, a large annual sum will be required for defraying the salaries of the medical attendant, superintendent or resident inspector, and dispenser; also the hire of the cook, washerwoman, and, at least, one nurse: neither must it be overlooked that the smaller the establishment, the larger the proportionate expenses. One hospital for each county is just the utmost required and possible.

Numerous facts and extensive observation having proved the great influence that extraneous causes may exercise on the salubrity of towns and the country generally, the importance of sanatory measures was at once rendered palpable; and it is in our days regarded as almost a necessity, that a Board of Health, consisting of special men, should be established in all well organised communities, for the purpose of watching over the public health.

Such an institution was formed here; but it existed only in name. It consisted of all the town councillors and the medical men residing in Port-of-Spain, besides a certain number of householders—altogether from thirty-five to forty members—but was vested with no other authority than that of visiting the courtyards of dwellings, and reporting thereon to the governor. The late visitation of cholera has proved what were the powers of the Board of Health. The members were convened by the governor; a standing committee was appointed to prepare a report, and suggest precautionary and other measures. The report was sent to the governor, and never heard of more. So much for the authority of *that* Board.

It is now proposed, it seems, to constitute a General Board of

Health, with very extensive powers, and composed, for the majority, of members of the legislative council, and medical men in the pay of the government. Members of the legislative council may be "good men and true," but totally unsuited to the office. Special information and training are essential qualifications in the members of any Board of Health. The government is evidently anxious, even in this case, to retain their full and, as usual, undue share of authority.

TABLE SHEWING THE RESULTS OF ELEVEN YEARS' OBSERVATION WITH THE RAIN-GAUGE AT THE ST. JAMES'S BARRACKS AND THE ROYAL GAOL.

Months.	*St. James's Barracks.*										*Royal Gaol.*						General Average
	1825.	1826.	1827.	1847.	1848.	1849.	1850.	1851.	1852.	Average	1850.	1851.	1852.	1853.	1854.	Average	
January .	„	2·42	2·42	5·54	3·69	1·95	2·97	1·14	4·77	3·21	3·72	2·99	2·95	0·52	0·83	2·20	2·70
February .	„	0·95	0·95	0·56	2·69	0·70	0·90	1·70	2·25	1·39	1·21	0·76	3·05	4·30	2·51	2·37	1·88
March . .	2·17	0·45	0·45	1·54	0·37	2·20	0·82	0·67	2·34	1·32	1·27	0·79	1·88	2·18	0·83	1·39	1·35
April . .	5·91	Monthly fall not specified.	0·25	1 82	2·22	2·90	3·97	0·07	2·00	2·39	6·78	1·79	2·25	1·36	0·00	2·44	2·41
May . . .	6·93		6·50	1·97	8·16	9·00	6·35	5·23	4·97	6·14	5·48	5·33	4·06	3·30	3·80	4·39	5·26
June . . .	7·20		8·85	3·91	6·53	13·67	8·89	11·36	6·28	8·83	6·18	12·35	5·03	6·20	4·90	6·93	7·63
July . . .	8·37		7·86	10·34	14·38	7·30	9·54	10·56	4·27	9·08	9·09	8·84	4·45	5·22	13·37	8·19	8·63
August . .	7·95		4·70	11·62	10·16	10·86	16·22	16·81	5·90	10·53	16·42	9·41	12·30	10·85	14·77	12·75	12·14
September.	7·82		6·60	12·39	4·23	5·24	7·70	15·60	3·64	7·90	5·15	11·55	4 80	6·67	7·41	7·12	7·51
October .	6·84		9·73	9·36	5·66	10·15	7·57	10·47	5·92	7·36	7·43	9·40	4·15	10·43	6·93	7·67	7·51
November.	3·85		4·20	6·67	8·60	10·51	5·94	10·69	5·86	7·04	4·40	5·50	6·55	9·47	4·12	6·01	6·52
December.	5·89		5·40	3·70	7·60	5·20	2·95	6·84	9·92	5·94	4·59	5·55	9·00	8·74	9·03	7·38	6·66
	62·93	61·84	57·91	69·43	74·29	79·68	73·82	91·14	58·12	71·12	71·72	74·26	60·47	69·24	68·50	67·02	70·30

CHAPTER V.

POPULATION—ETHNOGRAPHY—RELIGION—EDUCATION—CRIME.

THE history of the population of a country is, at all times, an interesting topic; but it becomes particularly so under certain circumstances. In this respect, a descriptive outline, or general view of the early settlement, and gradual development of the population of Trinidad, is replete with interest, though, at the same time, involving a complicated problem which cannot be easily solved, from want of precise data and unprejudiced observation. I can, therefore, present only the partial results of investigation; but, such as they are, I hope they may prove useful and acceptable.

During the period of slavery, the records of births and deaths were kept with accuracy; but, immediately after emancipation, everything was neglected in this, as in many other essentials. In the year 1847, however, an ordinance was passed for registering births, deaths, and marriages; and a registrar-general appointed, as also local registrars. But, from one motive or another, the provisions of the ordinance were made neither sufficiently comprehensive nor stringent, particularly as regards the registering of births; so that the ratio is not what it appears to be in the yearly returns,—the number of births particularly being, in reality, greater than that recorded. Neither is there any provision for distinguishing legitimate from illegitimate children,—a classification most essential, in so far as it affords the means of testing the progress of a people in morals; for the proportionate number of marriages is, to a certain extent, one undoubted criterion of the morality of a population.

It would be well, also, should some regulation be introduced for a separate registry of the deaths occurring amongst immigrants; such a distinction would prove highly useful in supplying data for appreciating the risks of acclimatisation, and for establishing the

fair average and ratio of mortality in the colony under ordinary circumstances.

When first discovered by Columbus, Trinidad was apparently well populated, being then inhabited by *Yaos*, *Caribs*, *Chaymas*, and other tribes of the *Carib-Tamanaco* family. How these tribes were first treated by the invaders it is difficult to say; but there is reason to believe, that they did not receive a much better usage than their unfortunate brethren of the other islands, and of the neighbouring continent. At a later period, however, their remnant tribes were formed into several missions throughout the island, namely, at Tacarigua, Arouca, Cuare, Cumana, Siparia, Montserrat, Savannah Grande, Araim, and Toco. But, in Trinidad, as in other parts of the New World, the poor Indians have resisted the pressure of civilisation, and finally sunk under the ascendancy of a more intelligent race. In the year 1783, the Indian population amounted to 2,032 souls, who, at the capitulation of the island, had declined, according to official returns, to 1,082 individuals. In the year 1830 there still existed 689 survivors of that race; the ratio of mortality among them being, in the same year, 3·49, and that of births 3·75 per cent. At present there cannot be above 200 or 300 Indians in the colony, so that the aborigines may be said to be almost extinct. The natural inquiry arises, what were the causes productive of this general decrease? Did they emigrate to the neighbouring continent, or have they died away in the island? It is highly probable that many did seek a refuge and home in the virgin forests of Venezuela; but I also coincide in opinion with some judicious observers, who trace the approximate extinction of these tribes to the marked preference manifested by the Indian women towards the negroes and the whites, by whom they were kindly treated, whilst they were regarded by their husbands, of kindred race, more as slaves and beasts of burden, than as equals or companions. As a consequence of those connections, there exists at present, in the colony, a certain number of individuals of Indian descent, but of mixed blood.

I have already mentioned that it was only after the granting of the second cedula by the Spanish government, in the year 1783, that Trinidad may date any ostensible settlement. Encouraged by the liberal offers made by that cedula, colonists thronged from Grenada, St. Vincent, and the French Islands,

succeeded by a few refugees from San Domingo, with *émigrés* from France, and even from Canada. Their example was followed by many respectable coloured families from the above islands, who gladly availed themselves of the protection afforded, and the opportunity offered of bettering their condition by becoming landholders in Trinidad; and as late as the year 1829, if my information is correct, there were scarcely more than six or eight white proprietors in Naparima, whilst nearly two-thirds of Port-of-Spain belonged to the coloured class.

A few thousand Africans only have directly been introduced by slavers, the great majority of the labouring class having either accompanied their masters, or been clandestinely introduced by them, from the neighbouring islands. About 4,000 Africans, liberated from captured slavers, have been added to that class since emancipation; 8,200 Asiatics—Coolies and Chinese—have also been imported since the year 1845, when the first Coolie vessel anchored off Port-of-Spain.

Our population, therefore, consists of a motley aggregation of Africans, Asiatics, Europeans, and a few individuals of Indian or American blood, together with their mixed descendants. By Africans, I mean not only those born in Africa, and introduced here as slaves or indentured labourers, but also those born in the island, of African parents, and usually called African creoles, together with those emigrants from the sister colonies and the United States, who are also of the African race. The European section is formed of British (particularly Scotch), of French, Spaniards, a few Germans, and some Portugese from Madeira, with the respective descendants of those various nations. The Asiatics consist of Hindoos and Chinese, imported at the expense of the colony, as agricultural labourers, for the cultivation of staples, and especially of sugar. Heterogeneous as is this mass, I must say that the greatest harmony had long prevailed among the different classes, a result which, in my opinion, is attributable to the liberal policy pursued by the local government, and sanctioned by the Colonial Office. Equal protection was extended to all, and all were contented to live under what they considered to be a really and truly paternal rule. No distinction was drawn betwixt British and foreigners, and, I dare say, no essential difference of feeling existed. There has been lately, however, a tendency to abandon that broad and just course for the pursuit of a narrow, and in my

opinion, a very injudicious line of policy. That policy has for its principal supporter and organ, our present attorney-general, backed by a few interested and short-sighted individuals. They contend that the habits and feelings of the inhabitants *must* be *purely* British, and consider it as a taint in those who, though not the less loyal to their adopted government, do not exhibit them; thus making no allowance for the inborn predilections of ancestry, or of fatherland, and acting in a manner to inspire the people with an aversion to those very habits, and an alienation from those feelings. They account it almost a crime, on the part of *foreigners*, to be unable to speak a language with which the latter are unacquainted; and yet they have never even encouraged the establishment of schools in those parts of the island wherein, from the altogether foreign elements of the population, the English language is totally unknown. This is naturally regarded, by the majority of the natives, as a gross injustice. The entire population of the island, according to the census taken on the 1st of July, 1851, was estimated at 69,600; of which 36,631 were males, and 32,969 females. It was classed as follows: under 10 years, 16,724; from 10 to 20, 10,667; from 20 to 30, 16,608; from 30 to 40, 12,820; from 40 to 50, 6,575; from 50 to 60, 3,373; from 60 to 70, 1,797; from 70 to 80, 704; from 80 to 90, 237; above 90, 94. Average number of births, 2,441; of deaths, 2,669. The national distributions were as below:

Natives of Trinidad	40,584
Natives of Africa	8,150
Natives of Europe	1,508
Natives of Asia	4,200
Emigrants from other parts	15,158
Total	69,600

The few aborigines yet remaining in the colony are leading an isolated life in the forests, depending for their subsistence upon hunting and fishing, using the bow and arrow in preference to the fowling-piece, and, in short, retaining their savage ancestral habits precisely as if the light of civilisation and the sun of Christianity had never beamed on their lovely island of *Jere*. A few families of Indian descent are still, however, to be met with in different parts of the island, all speaking the Spanish language

and having preserved Spanish habits,—fond of smoking, dancing, and all other kinds of amusements, but, above all, of the *dolce far niente*. They are, generally, possessors of *conucos*, that is to say of a few acres of land, which they cultivate in provisions and coffee, but particularly in cacao.

Newly imported Africans are, generally speaking, industrious and laborious, but avaricious, passionate, prejudiced, suspicious, and many of them still adhering to heathenish practices. The *Yarribas* or *Yarrabas* deserve a particular notice. They are a fine race, tall and well proportioned; some of them with fine features, intelligent, reflective, and seeming to appreciate the benefits of civilisation and Christianity. They are laborious, usually working for day-wages on estates, but preferring job labour. The women are mostly occupied in petty trade or huckstering; some also in the culture of ground provisions; their houses are neat, comfortable, and kept in perfect order within. In character they are generally honest, and in disposition proud, and even haughty; so that the cases are rare in which a Yarraba is brought before a magistrate for theft, breach of contract, or other misdemeanour. They are besides guided, in a marked degree, by the sense of association; and the principle of combination for the common weal has been fully sustained wherever they have settled in any numbers; in fact, the whole Yarraba race of the colony may be said to form a sort of social league for mutual support and protection.

The emancipated class and their descendants bear the distinctive characteristics of the three European nations with which they were more intimately connected; and these characteristics are, to a certain extent, borne out by the external appearance and deportment of the three specimens,—the French negro resembling in these respects a French European; the Spanish, a Castilian; and the English negro, an Englishman. There are, however, some general traits which may be taken as an index to the distinctive peculiarities in the character of the emancipated class. The recollections of slavery seem still to act as an *incubus* on their faculties; and they are, in general, averse to all menial occupations, and to the hired labour of the cane-fields especially. This feeling undoubtedly has its origin in human nature; but, unfortunately, they still continue to nourish a sort of repugnance to all kinds of agricultural pursuits, giving preference and pre-

cedence to any petty trade and peddling speculation, or handicraft, rather than to the adoption of the more healthy and noble occupation of agriculture. They are excessively fond of display, and of appearing to their best advantage in dress—thus mistaking vanity for that rational pride which ought to govern human actions. Singularly improvident, and satisfied with the present "daily bread," they do not seem to think for a moment of the necessity of economy, in order to meet and alleviate cases of illness, accidents, or other contingencies of the future. Although thus extravagant, they use no steady exertion in earning their wages; nor, generally speaking, will they vest it advantageously in the savings banks, or otherwise, even when earned: in fact, they do not exert themselves beyond the merest necessity. As a consequence, very few individuals have sensibly progressed; on the contrary, the emancipated—as a class—may be said to have retrograded, and are now suffering severely from the general distress. As they were liberated without any preliminary preparation, they are grossly ignorant not only in respect of their social and religious duties, but also of their own true interests. And yet the African, though inconstant and inconsistent, is susceptible of improvement to an extent which, perhaps, has never been fairly tested; for he is, I consider, a being of pre-eminently religious feelings, and possessed of a quick intelligence, though sadly defective in the powers of reflection. Being robust, and, under ordinary circumstances, of abstemious habits, the African is capable of enduring privation and climatic exposure, it cannot be said with fortitude, but with an apathy that is almost inconceivable.

The Europeans, and their descendants, do not offer any peculiar traits beyond those which prevail among the nations of their respective ancestries. In the mass, however, creoles may be characterised as improvident, fickle, and by no means exempt from the censure I have attached to the emancipated class—that of disliking agriculture and other occupations which require exertion and steadiness of purpose. To the European population the Portugese emigrants from the Madeiras may be regarded as a valuable addition: it is, therefore, to be deplored that greater encouragement was not afforded them on their arrival; as, owing to this neglect, more than three-fourths of them have since re-emigrated to the United States. The example, however, of those

still remaining in the island amply proves that, even under unfavourable circumstances, industry, perseverance, and honesty, are the surest means of success; for many of these emigrants from the Portuguese islands having, by perseverance and economy, accumulated some small capital, and established themselves in the grocery line, are now known as respectable and thriving shopkeepers. Others, again, are employed in the cultivation of vegetables and Guinea-grass in the neighbourhood of the town, or as day labourers; the latter especially on cacao estates. They are, in general, preferred, not only as being more intelligent, steady, and hard-working, but also as more faithful than the generality of the labourers; for they regard it as a duty to give a fair day's work for a fair day's pay. Although foreigners, and almost helpless on their arrival, the majority of the Portuguese settlers are now in better circumstances than the Creoles and the emancipated class, who undoubtedly possessed greater original and local advantages.

Immigrant Asiatics at present form the great body of our available agricultural population, and are almost the sole resident labourers on sugar or cacao estates. The Coolies are a mild and industrious race, not so robust as the African, but more steady and obedient, and do not seem to entertain any dislike to agriculture. They are highly intelligent, and saving, but they seem to learn and speak foreign languages with difficulty. The African is far their superior in that respect. They are, in general, filthy in their habits, and it is not rare to find, in crowded hovels, men, women, and children indiscriminately herding with their domestic animals; many, however, have already adopted a better mode of living.

The Coolies of the Mahometan faith have been found, on the whole, more intelligent, active, industrious, and orderly than those of the Gentoo and other castes of India. Many of the former can read and write, whereas few of the latter can. These Asiatics still adhere to their own peculiar habits and creeds; they even continue, with rare exceptions, to wear their country costume, and but few have become converts to Christianity: this may be attributed partly to the little interest manifested towards their conversion, and partly to the unfortunate arrangement which insures their return to India after a term of five years' service. They are thus naturally led to retain most of those

habits which they expect to resume in full force on revisiting their native land.

As to the Chinese, they are few in number—about 500—and but recently arrived in the colony. Of them, as far as observation goes, it may be said that they are stubborn, obstinate, and prone to suicide; but they are well acquainted with the tillage of the soil, and are steady workers: in fact, those who have become acclimatised may be considered as the best labourers in the colony.

It is impossible correctly to trace the progress of population in Trinidad from the capitulation to the present day; and I have no documents wherefrom to ascertain even the increase of that population by natural causes. Captain Mallet's official return states the population to have been in 1797, 17,718, viz., 2,151 whites, 4,476 free coloured, 10,009 slaves, and 1,082 Indians. Previous to the cedula of 1783, it was 2,763: whites, 126; free people of colour, 295; slaves, 310; Indians, 2,032. In 1790, it had increased to a total of 10,422. I find in Aliedo's dictionary that in the year 1805 it amounted to 25,245 souls, divided as follows: whites, 2,261; people of colour, 3,275; slaves, 19,709. It appears, also, that in the year 1825 it had augmented to 42,262 inhabitants.

The census of 1851, although incorrect in several minor respects, may be, however, regarded as containing a fair return of the population of the island, which then amounted to 69,600 souls; and 2,441 being the number of births for the same year, gives the ratio of 3·50 per cent., or one birth for every 28·50 inhabitants. The following table shows the comparative ratio of births in various countries:

No. 1.

Cuba	1 per 23
France	1 „ 21·67
Prussia	1 „ 23·32
Illyria	1 „ 25
The Lombardo-Venetian Kingdom	1 per 22
Kingdom of the Two Sicilies	1 „ 24
England	1 „ 35

Table No. 2 shows the number of births in the island during a period of six years, and for each quarter in every year, as also the ratio of males to females.

No. 2.—Births.

Years.	Males. Registered Quarter ending Mar. 1.	June 2.	Sept. 3.	Dec. 4.	Quarterly Totals	Females Registd. Qr. ending Mar. 1.	June 2.	Sept. 3.	Dec. 4.	Quarterly Totals	Yearly Totals
1848	148	256	280	274	958	124	256	277	273	930	1888
1849	266	289	294	304	1153	279	253	309	307	1148	2301
1850	245	315	315	270	1145	305	271	270	236	1082	2227
1851	308	310	301	308	1227	294	309	341	270	1214	2441
1852	292	290	316	303	1201	260	256	312	306	1134	2335
1853	309	289	312	304	1214	268	314	353	278	1213	2427
1854	—	—	—	—	—	—	—	—	—	—	2828
Grand Totals.	1568	1749	1818	1763	6898	1530	1659	1862	1670	6721	15847

The grand total of 15,847 births for seven years gives a yearly average of 2,264: taking the population at 70,000, the ratio is 1 per 30·91. But this ratio is evidently too low, owing to the circumstance already mentioned, viz., the great neglect in the registering of births. If we take the towns of Port of Spain and San Fernando jointly on the one part, and the rural districts collectively on the other, we arrive at the following results: 1 birth per 31·64 for the two towns, and 1 per 31·14 for the rural districts, as shown in the annexed table.

No. 3.—Table showing the number of Births registered in Port of Spain and San Fernando jointly, and the Rural Districts collectively, for a period of Six Years:

Years.	Port of Spain and San Fernando. Males.	Females	Yearly Totals.	Rural Districts. Males.	Females	Yearly Totals.
1848	399	323	722	559	607	1166
1849	309	320	629	844	828	1672
1850	321	306	627	824	776	1600
1851	349	317	666	878	897	1775
1852	350	258	608	851	876	1727
1853	314	311	625	900	902	1802
Grand Totals.	2042	1835	3877	4856	4886	9742

We have here a grand total of 3,877 births for Port of Spain and San Fernando, or a yearly average of 646 births for the six years; taking now the united population of both towns in 1851,—

say 20,445 as an average,—we have the above-mentioned ratio of 1 birth per 31·64 inhabitants for the towns; also, taking the collective population of the rural districts at 49,555, and the yearly average of births at 1,623, there results the aforesaid ratio of 1 per 30·53 for those districts.

By referring to the above tables, we find that out of a grand total of 13,619 births for the six years, there are 6,898 males and 6,721 females; so that the males are to the females, as 100 is to 96, or, again, as 104 is to 100.

No. 4.—Table showing the ratio of Males and Females in various Countries and Localities.

England	1·01 to 1
France	1·04 „ 1
Paris	1·22 „ 1
United States	1·04 „ 1

Hufeland pretends that the ratio of the sexes, for the whole world, is as 21 males to 20 females, or as 1·05 and 1·00. Port of Spain and San Fernando give the following relation: 1·11 males and 1·00 females; the rural districts, 1 male and 1·06 females, or 1,000 males to 1,006 females. This latter result is somewhat contrary to what has been observed elsewhere, the number of males being always greater than that of females.

A fact highly interesting in the history of population is, the proportionate number of legitimate and illegitimate children. To the registrar of Port of Spain I am indebted for the following returns:—

Table No. 5.

Years	Legitimate.	Illegitimate.	Totals.
1848	208	288	496
1851	192	321	513
1854	215	222	437
Totals.	615	831	1446

The respective numbers of legitimate and illegitimate children being 615 and 837, the ratio is 1 legitimate child to 1·36 illegitimate; or, again, 100 legitimate to 136 illegitimate children.

I must confess this is a sad, yet not hopeless result, for in the year 1842 it was 100 legitimate to 315 illegitimate children in the same town of Port of Spain, as shown by the following returns, carefully extracted by myself from the registries of Trinity Church, the Catholic cathedral, and the dissenting Catholic chapels then existing. The three periods comprise one year of slavery, one of apprenticeship, and one of freedom:—

Table No. 6.

Periods.	Legitimate.	Illegitimate.	Totals.
1830 to 1831	132	419	551
1834 to 1835	176	531	707
1838 to 1839	197	546	713
Grand Totals	475	1496	1971

These two numbers, 475 and 1,496, give, as already stated, the proportion of 100 legitimate only to 315 illegitimate children.

In Prussia, the ratio is as 13·09 legitimate to 1 illegitimate; in France, as 13·69 to 1; in Havanna, for the whites, and the free people of colour, as 1·02 to 1, or as 102 to 100. Though there is a very great improvement since the abolition of slavery, how far are we yet from the standard attained in France, Prussia, and the European countries generally!

By reference to Table No. 2, we have the number of births per quarter, and therefore can ascertain the months wherein a larger average of births take place. Thus, we have 3,098 for the first quarter, ending 31st of March; 3,408 for the second quarter; 3,680 for the third; and 3,433 for the fourth quarter. The months showing a majority of births are, therefore, July, August, September, October, November, and December; the months more favourable to conception would, consequently, be October, November, December, and January; and those less so, March, April, May, and June.

On the other hand, the three periods already mentioned exhibit the following results:—

No. 7.—Table showing the Number of Births per Month.

Months.	First Period.	Second Period	Third Period.	Totals.
August . .	43	65	83	191
September .	43	51	72	166
October . .	36	42	53	131
November .	37	88	43	168
December .	28	40	66	134
January . .	53	57	64	174
February . .	46	49	52	147
March . . .	41	50	89	180
April . . .	84	91	60	235
May . . .	35	82	52	169
June . . .	46	52	65	162
July . . .	45	61	64	170
Totals . .	537	728	763	2028

By the above table, the months that exhibit the greatest number of births are the following: April, August, March, January, July, and May; and those the least, are October, December, and February. In France, the months presenting the greatest number of births, according to Villermé, are January, February, March, and April, consequently those most favourable to conception are June, July, May, and August. In Sweden, September exhibits a greater, and June a less number of births.

MARRIAGES.

No. 8.—The following Table shows the Number of Marriages throughout the same term of Six Years.

1848.	1849.	1850.	1851.	1852.	1853.	1854.
364	335	58	391	382	329	1625

Average for the first six years—say, 360.

Taking, as we have already done, the average number of inhabitants at 70,000, we have one marriage for every 194·44 inhabitants. In England, the ratio is 1 per 134. I have not included, in the above calculation, the year 1854, which exhibits 1,625 marriages, or the rate of 1 marriage per 43 inhabitants, a very startling result, if it could not be satisfactorily accounted for;

but in this memorably calamitous year, 1854, cholera raged in the colony for about four months, and not only were several persons married in *articulo mortis*, but the dread created by the hourly impending danger of almost sudden death, induced many who were living in concubinage to submit to the holy rite; hence the disproportionate number of marriages in that year.

Mortality.—This is a subject of the greatest interest, and for the analysis of which we fortunately possess more correct and precise data than for that of births.

No 9.—Table showing the Number of Deaths Quarterly, for both Sexes, over a period of Six Years.

	Males. Registered Quarter ending				Quarterly Totals.	Females. Registd. Qr. ending				Quarterly Totals.	Grand Totals
	Mar. 1.	June 2.	Sept. 3.	Dec. 4.		Mar. 1.	June. 2.	Sept. 3.	Dec. 4.		
1848	275	324	314	303	1216	159	214	264	206	843	2059
1849	327	303	340	271	1241	221	189	233	191	834	2075
1850	322	328	375	321	1346	263	236	307	208	1014	2360
1851	285	397	414	308	1404	245	321	405	204	1175	2579
1852	269	379	358	263	1269	193	224	263	214	894	2162
1853	322	382	573	381	1598	229	244	337	264	1074	2672
	1800	2113	2314	1847	8074	1310	1428	1809	1287	5834	13908

13,908 being the grand total of deaths for six years, we have 2,318 as a yearly average. The whole population of the island being estimated, for the same period, at 70,000 inhabitants, in round numbers, we have the ratio of one death per 30·20 inhabitants. Captain Tulloch, in his "Statistical Report," &c., gives the average mortality, among the slave population in the British West India colonies, for a period of about fifteen years, as 1 per 33. In Jamaica and Nevis it was 1 per 40 and 41; in Grenada and Tobago, 1 per 30 and 24; in Trinidad, 1 per 33.

No. 10.—Table showing the rate of Mortality in various Countries and Cities.

England	1 per 51	Madrid	1 per 29
Sweden	1 ,, 47	Naples	1 ,, 28
London	1 ,, 46	Bombay	1 ,, 26
Belgium	1 ,, 43	Batavia	1 ,, 26
France	1 ,, 39·7	Rome	1 ,, 25
St. Petersburg	1 ,, 37	Amsterdam	1 ,, 24
Berlin	1 ,, 34	Cuba	1 ,, 22·72
Paris	1 ,, 31·4	Vienna	1 ,, 22·50

In New York the mortality among the negroes is 1 per 19, and 1 per 35 for the whole population; in Philadelphia it is 1 per 19 for the former, and 1 per 31 for the latter.

We find also, in Captain Tulloch's report, that the mortality among the white troops has been, in the West Indies, 1 per 15. It has been among the black troops in the same colonies as 1 per 25; in Sierra Leone as 1 per 35·71; in Gibraltar as 1 per 15—exactly that of the white troops of the West Indies. After stating that in the Barbadoes command the mortality among the troops was, during twenty years, 93 per 1,000, or one per 10·72, Captain Tulloch says of Trinidad, "During the same period, the mortality has averaged about 106 per 1,000 of the white, and 40 per 1,000 of the black troops annually. The high ratio of the former arises principally, however, from the deaths during the first three years, when the report states there were a great number of debilitated and worn-out soldiers in the garrison. *The subsequent mortality is under the average of the whole command—being only about* 60 *per* 1,000 *or* 1 *per* 16·66." In Dr. Gavin's "Report on the Sanatory Measures necessary to be taken in the colony of Trinidad, June, 1852," it stated that the mortality among children under five and ten years is the true cause of the excessive mortality of Port of Spain, it being 1 in every 17·10. "However, when further inquiry is made," says the learned inspector, "it is *found that the mortality in Port of Spain, among adults, is not very dissimilar to the mortality of London.*"

If we take the towns of Port of Spain and San Fernando as distinct from the rural districts, we arrive at the following results. The grand total of deaths in the rural districts being 9,431, the yearly average for six years is 1,572. The population being for the same period 49,555 inhabitants, the rate of mortality would then be 1 per 31·52. The grand total of deaths in Port of Spain and San Fernando being 4,467—also for six years—the yearly average is 744·50. Taking the aggregate population of both towns at 20,445 inhabitants, the rate of mortality would then be 1 per 27·46.

As regards the sex, the number of deaths being 8,074 males, and 5,834 females, the ratio is 100 to 0·72, or again as 100 males to 72 females. If we take the males and females separately, we have 36,631 males and 7,974 deaths, or an average of 1,329, or

1 death per 27·56: 32,969 females, and 5,924 deaths, or an average of 987·33, or 1 death per 33.

By reference to Table No. 9, we have the following results, as regards the influence of months on the general mortality: first quarter, 3,110; second quarter, 3,541; third quarter, 4,123; fourth quarter, 3,134: so that the months of the third quarter, or July, August, and September, present a greater mortality than the others. Next in ratio are June, May, and April, of the second quarter, whilst the first quarter, consisting of January, February, and March, exhibits the least mortality. My own researches have led me to the following results:—

No. 11.—Table of the Monthly Mortality.

Months.	First Period.	Second Period.	Third Period.	Totals of Periods.
August . .	23	28	42	98
September .	31	22	42	95
October . .	29	24	40	93
November .	40	27	43	110
December. .	27	22	36	85
January . .	26	31	30	87
February . .	36	31	26	93
March . .	44	20	39	103
April . . .	49	22	31	102
May. . . .	32	22	36	90
June . . .	33	27	36	96
July. . . .	40	42	41	123
General Totals	415	318	442	1,175

The months presenting the greatest mortality are July, November, March, April, August, and June. It follows from the above returns, taken at various periods, that the most unhealthy months would be July, August, April, and June.

The following tables will show the influence of age on the mortality. The returns are for the town of Port of Spain, singly, and for the towns of Port of Spain and San Fernando, jointly:—

No. 12.—Port of Spain.

Periods.	Under 10 years.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Grand Total.
First .	165	19	53	50	40	26	19	9	5	1	
Second	88	24	42	44	33	30	17	17	5	2	
Third.	113	40	65	61	52	24	15	12	7	3	
Totals	366	83	160	155	125	80	51	38	17	6	1,081

No. 13.—Port of Spain and San Fernando.

Periods.	Under 10 years.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	Above 50.	Yearly Totals.
1848 .	270	69	152	133	152	204	971
1849 .	224	89	168	137	118	128	864
1850 .	286	91	138	110	104	125	854
1851 .	506	64	116	122	97	142	1,047
1852 .	234	62	126	126	91	166	805
Grand Totals	1,520	366	700	628	562	765	4,541

Out of a grand total of 5,622 deaths, 1,886 took place under ten years, which gives the ratio of 1 per 298, or more than one-third; between 10 and 20, 449, or 1 in every 12·52; between 20 and 30, 860, or 1 in 6·54, nearly double; between 30 and 40, 7·83, or 1 in every 7·78. The greatest mortality is under ten years; then, successively, between 20 and 30, 30 and 40, 40 and 50, and least between 10 and 20. These results coincide pretty exactly with those obtained in Europe, in Cuba, New York, and Baltimore. Here, as in those places, the period between 20 and 30 is that of the passions and of adventurous life.

The following table, drawn up by the Registrar-General, shows the rate of mortality from birth to the age of ten years:—

Table No. 14.

Period.	Under One Month.	1 to 3.	3 to 6.	6 to 12.	1 to 5 Years.	5 to 10.	Yearly Totals.
1848 .	58	8	19	25	72	18	200
1849 .	37	11	19	27	107	33	234
1850 .	52	13	30	38	118	35	286
1851 .	45	20	30	51	294	65	505
1852 .	61	10	18	38	99	25	251
Totals of Ages	253	62	116	179	690	176	1,476

Thus, of a grand total of 1,476 deaths, 610 took place under twelve months, which gives the rate of one death per 2·42, that is to say, that of 242 deaths which took place from birth to ten years, 100 occurred between the ages of one and twelve months. The rate is very moderate between one and three, and also between three and six months, but very large between one and five years, this being not only the period of weaning, but also that wherein children are subject to the many diseases incident to infancy and early youth.

If, with the above data, we seek to establish a comparison between the number of births and deaths, we have the following result:—

Births	13·619
Deaths	13·908
Difference . .	279

The difference 279 is in favour of deaths, that is to say, that within six years the population would have decreased, from natural causes, by 48 every year. But this result is not, and cannot be, correct, because, as I have already stated, the returns of births are not regularly made, whilst those of deaths are generally correctly registered. On the other hand, by taking the three periods already referred to, we obtain the following result:—

Births (Table No. 7)	2,028
Deaths (Table No. 11) . . .	1,175
Difference	853

In this case the difference is in favour of births, viz., 100 births to only 57·81 deaths, showing an increase of 284 per annum, and that for the town of Port of Spain alone.

As these returns were extracted by myself from the registries of Trinity Church and the Catholic cathedral, I regard them as perfectly correct, and consider the latter result nearer to the mark than the former.

I have not included the mortality of the year 1854 in the above returns, since it may be regarded as an exception, on account of the great ravages occasioned by cholera. In that year the grand total of deaths amounted to 7,636. In times of severe epidemics the number of deaths by ordinary causes decrease. Supposing, then, the average of the six preceding years to be the mortality by natural causes for 1854, that average being 2,318, there would remain 5,318 deaths attributable to cholera. Now, taking the population at 73,000 inhabitants, on account of the large accession of immigrants since the census, the proportion of deaths from cholera would then be 7·28 per cent. for the whole island. In Port of Spain the mortality has been, according to the returns of the cemetery, 1,986; taking the population in round numbers at 18,000 souls, the proportion would then be, for the town, 11·03 per cent. Thus, not only is the mortality of the whole island, but even that of Port of Spain, under that of the other West India Islands which were attacked by cholera.

I wish now particularly to call attention to a few interesting conclusions which naturally flow from the above statistical facts.

The number of females being, in the whole island, 32,969, and that of males 36,621, it is evident that, *cæteris paribus*, the ratio of births must be smaller in Trinidad than in other countries where the sexes are equal, or nearly so; and the comparatively small proportion of births is thereby easily accounted for.

A rather curious fact is the great overplus of females inhabiting towns, as compared with the number of males. The towns of Port of Spain, San Fernando, and St. Joseph, exhibit the following numbers:—9,091 males and 12,237 females; leaving for the rural districts 27,540 males, and 20,732 females, that is to say, the proportion in the towns is 100 females to about 74 males, and in the rural districts, 100 males to about 75 females. This I con-

sider, both in a moral and political point of view, to be a deplorable result.

The accumulation of females in towns may be explained by the following considerations. Females are much more customarily employed as household servants than males, because, generally speaking, they are satisfied with less wages, and in-door occupations being more in accordance with the habits of their sex, they not only prefer that service, but are more *at home*, as it were, in the performance of its duties. There is, in addition to these, a very large proportion of needle and washerwomen, hucksters, cigar-makers, and petty traffickers, who more than compensate for the number of tailors, shoemakers, and other artisans of the male sex; however, it cannot be denied that many of the female sex resort to towns for the purpose of either public or private prostitution.

The larger proportion of males in the districts, on the other hand, evidently results from the disproportion of sexes among the imported immigrants. Out of a total of 12,912 immigrant adults introduced since the year 1845, 10,099 are males, with an accompaniment of only 2,813 females.

By reference to Captain Tulloch's "Statistical Report," and the Returns published for the six years ending December, 1853, it would appear that the ratio of mortality has increased: for, before emancipation, and *among the slaves*, be it remarked, it was 1 per 33, whereas it is now 1 per 30·20, for the whole population. This is a fact, which calls for the attentive consideration of the philosopher and the philanthropist, since it tends to prove that, even under the *incubus* of slavery, the mortality was less than under the regimen of freedom. The same result has been observed in the United States. But the condition of the emancipated in the British colonies is certainly very different from, and far superior to, the position of the free people of colour in the States; yet, it is to be presumed, that identical effects are the results of similar causes. These causes are: the improvidence and neglect of the emancipated; the misery which has been on the increase, since the year 1846 especially; the consequent want of the comforts—often, in fact, of the necessaries of life—and the utter deficiency of medical aid.

During the period of slavery, the slaves were not only provided

with regular medical attendance and medicines, but the sick were properly nursed, and the young carefully reared. Indeed, self-interest alone would induce such measures. At present, the labouring population, in the mass, receive no direct medical attendance, because of their own unwillingness to remunerate a regular practitioner: in lieu of this, they prefer the assistance of a class of impostors, both male and female, who unite the practices of *obeahism* and quackery, exact little or nothing from their patients, and are generally satisfied both with the amount and mode of payment tendered for the nostrums they administer, or the obeah incantations they perform. Again, when sick, very many of the labouring class are, solely through previous improvidence, in need of everything in the shape of comfort—not unfrequently even of the simple covering of a blanket. As to children, they are neglected to an extent which would not be credited elsewhere.

However, the people located on estates are, in these respects, in a better position, and the mortality is not so great among them as with those living in villages, or on their own small properties. It is also but just to take into account the risks of acclimatisation, to which the immigrants are subject, and which must necessarily increase the rate of mortality. The casualties resulting from this cause become apparent from the following facts:—the rate of mortality being 1 per 30·20 for the whole population, is 1 per 33·19 among females, and 1 per 27·56 among males; and of the latter sex are more than three-fourths of the immigrants. I repeat that this state of things calls for the consideration of the philosophic philanthropist, but particularly of our local Government.

Religion.—Although Christianity is the professed religion of almost the entire population, yet immigration has been instrumental in introducing Mahometans, Gentoos, and other heathen sects. The religious community may be divided as follows:—

Christians	65,053
Mahometans	1,016
Gentoos and others	3,531
	69,600

The Christians may be thus sectioned:

Roman Catholics	44,576
Episcopalian or Church of England	16,350
Wesleyan Methodists	2,570
Presbyterians	1,021
Baptists	449
Independents and others	239

So that Catholicism is the religion of the great majority of the people; since, Trinidad having been settled by Spaniards and French, they naturally brought up their slaves in the religion which they themselves professed. Episcopalians and Dissenters came in after the capitulation of the island; but, it is since emancipation that their number has increased by the influx of immigrants from the other British West India colonies, as well as from North America, Great Britain, and Madeira,—the emigrants from the latter being, in fact, refugees in consequence of a change of religion. In the year 1844, an ordinance was passed "For the better regulation of the duties of the United Church of England and Ireland in the Colony of Trinidad, and for insuring the more effectual performance of the same;" the island, forming part of the diocese of Barbadoes, was also divided into parishes for ecclesiastical purposes.

The Episcopal Establishment consists, locally, of an archdeacon, six rectors, with eight curates.

The Catholic Establishment consists of an archbishop, whose jurisdiction extends over St. Lucia, St. Vincent, Grenada, Tobago, and Trinidad; of nineteen parish-priests or *curés*, and seven assistant-curates.

The Wesleyans have seven chapels, a superintendent, and one or more resident ministers; the Presbyterians, four chapels and three ministers; the Baptists, eight chapels, and one minister residing in Port of Spain: local preachers are appointed to the different chapels, and also leaders in the Wesleyan.

The Roman Catholic clergy are supported from the funds of the colony; but the archbishop, who was formerly in the receipt of £1,000 sterling per annum, now receives only £500; the *curé* of Port of Spain, £300; and each parish-priest, £150; assistant-curates, each from £130 to £100 sterling—making a total of

£4,480 for a Catholic population of 44,576; or, at the rate of about two shillings per head of that population.

In the Episcopal Establishment, the archdeacon receives £500 sterling; the rector of Trinity Church—also as rural dean—£600; each other rector, £350; and each assistant-curate from £150 to £300 sterling—making a grand total of £5,303 sterling for a population of 16,275 individuals; or, at the rate of six shillings and sixpence per head of that population. The parsonage house of Port of Spain having been declared crown property, is, of course, maintained at the public expense, and not a year elapses without some grant being also made for the repairs or improvement of churches and parsonage-houses in the rural districts,—though such grants are against the provisions of the Ecclesiastical Ordinance.

The Catholic as well as the Episcopalian Establishment is aided in the erection of new places of worship by grants from the local government. The rules are these: subscription funds are collected and deposited at the colonial bank; and, on application being made for a grant—accompanied by estimates—the Council generally votes a sum equal to that collected, or in deposit.

If we seek to establish a comparison between the different Christian denominations, in respect to the number of ministers attached to each, we arrive at the following results:—Catholic church, 1 minister to 1,714 inhabitants; Church of England, 1 to 1,085; Wesleyans, 1 to 1,255; Presbyterians, 1 to 258; Baptists, 1 minister to 449 inhabitants. So that the Roman Catholic Church, though numerically superior, is much more inadequately provided for than the others: this becomes still more apparent when the various duties of a priest of that church are taken into consideration; besides which, even under the above slender provision, there are, at present, five Catholic parishes without pastors.

The following are the parishes under the control of the Church of England. County of St. George—Holy Trinity, comprising Port of Spain and vicinity; St. Mary (*Tacarigua and Arouca*); St. Michael (*districts W. of Port of Spain*); St. Jude (*Arima and Guanape*); St. John (*St. Joseph and Santa-Cruz*). County of Caroni—St. Thomas (*Chaguanas*); St. Andrew (*Carapichaima and Couva*); St. Philip (*Savanata*). County of Victoria—St. Paul (*N. Naparima*); St. Peter (*Pointe-à-pierre*); St.

Luke (*S. Naparima*) ; St. Stephen (*Savannah Grande*). County of St. Patrick—Christ Church (*Trois* and *Cedros*) ; St. Matthew (*Oropouche* and *La Brea*). County of St. Andrew—St. Bartholomew.

The Catholic parishes are as under:—County of St. George—Port of Spain, San Juan, St. Joseph, Arouca, Armia, Caroni, Santa Cruz, Maraval, Diego Martici, Carenage. County of Caronia—Chaguanas, Couva. County of St. David—Toro and Blanchivense. County of Victoria—San Fernando, Pointe-à-Pierre, Savannah Grande. County of St. Patrick—Siparia and Oropouche, La Brea, Erici, and Cedros. County of Mayaro—Mayaro.

Some of these parishes are extensive, and yet, in many cases, so difficult is the communication between their different parts, that it is a matter of impossibility for the most zealous and robust clergyman fully to attend to his multifarious duties; as a consequence, not only is religious instruction almost utterly, because unavoidably, neglected, but it may be said that too many, in those districts, live and die like heathens.

Education.—During the period of slavery, a few private teachers, of the lowest standard in point of qualification, were employed in instructing the children of the free classes. After the passing of the Act of Emancipation—in the year 1834—schools were established in several districts, with the aid of funds bequeathed by Lady Mico for educational purposes ; but they were soon afterwards broken up. Other schools were then projected in connection with the Anglican and Romish churches, and under the auspices of the local government: but the system of tuition not being based upon any comprehensive or practical plan, and being conducted — with few exceptions—by incompetent persons, proved very inefficient. There may, however, be mentioned, among such exceptions, several which were found in Port of Spain, and especially those supported by the board of the town council.

The adoption of a general and liberal system of primary instruction had become necessary since emancipation, not only to eradicate the ignorance so deeply rooted in the soil of slavery, but also to impart a knowledge of the English language to a population of foreign origin. This, Lord Harris perceived at once ; and in the year 1851, the following resolutions were, on his proposi-

tion, adopted in a committee of the board of council, for the establishment of schools throughout the island.

First. A board of education to be formed, consisting of the governor, with such members of the legislative council of government, and other persons, being laymen, as may be appointed from time to time by the governor.

Second. An inspector of schools to be appointed, with a salary.

Third. A training school, with a master and mistress, to be established for the educational training of teachers; the expenses for maintaining such school, with suitable accommodation for the teachers, to be defrayed from the public funds of the colony.

Fourth. Primary schools to be at once established in each ward of the colony, and at such places most suitable for the convenience of the population.

Fifth. The training and primary schools to be under the control of the board of education, and subject to the supervision of the inspector.

Seventh. The expenses of erecting and maintaining the school-houses, with suitable accommodations for the teachers, and the salaries, to be defrayed from the funds of the wards.

Eighth. No person to be appointed master or mistress, unless such person has produced a certificate of good character to the satisfaction of the board of education, and until such person has undergone an examination by the board, and has received a certificate of efficiency.

Ninth. At the primary schools, instruction to be provided for day scholars, and for evening and adult classes.

Tenth. Admission to the primary schools to be gratuitous.

Twelfth. Instruction to be given at the training and primary schools to be secular, and without direct religious or doctrinal teaching.

These resolutions formed the basis of the system proposed by his Excellency Lord Harris; but experience has proved, I apprehend, that it was neither intrinsically the best, nor the most suitable to the requirements of the population.

The training school, established in the immediate vicinity of Port of Spain, has a model school attached, with 138 pupils on the roll; it may be regarded as intermediate between a primary and grammar school, and is attended by several children of respectable

families. Under the conduct of masters from the above, there are at present twenty-two ward schools, with a total of 1,246 pupils, namely :—

County of Saint George.—San Juan, 65 ; Upper Caroni, 13 ; St. Joseph, 60 ; Maranas, 24 ; Tacarigua, 76 ; Santa Cruz, 23 ; Arouca, 88 ; Diego Martici, 57 ; Arima, 36.

County of Victoria, North Naparima.—Village of Saint Joseph, 60 ; Savannah Grande, 60 ; the Mission, an Indio-American Settlement, 146 ; Village of St. Magdalene, 48.

South Naparima.—Victoria village, 61 ; Rambert village, 35.

County of Saint Patrick.—Oropouche, 56 ; Cedros, 37 ; Guapo, 35.

County of Caroni. — Chaguanas, 70 ; Savonetta, 64 ; Couva, 92.

County of Mayaro.—Mayaro, 40.

Out of these 1,246 pupils, 350 are girls, and 896 boys. Besides these ward schools, there are, in Port of Spain, two public schools maintained by the borough council ; one for boys, with 74, and the other for girls, with 45 pupils ; one also in connection with the Church of England, with 34 boys ; and an infant school, with 100 children ; 94 boys, and girls, 51. In addition to these, are two girls' schools, instituted and maintained by the sisterhood of St. Joseph, with 300, and one boys' school, supported by the Catholic bishop, with 190 pupils : in the three latter are taught reading, writing, the four primary rules of arithmetic, and the church catechism, to which, for the girls, are added needle and fancy work. All the above schools may be said to be gratuitous establishments, for the instruction of the children of the poorer classes. There are, besides, several private institutions, in which is afforded an education superior to that which can be acquired at the public foundations.

In the year 1836, two seminaries were established in Port of Spain, under the patronage of the then Catholic bishop, the Right Reverend Dr. Macdonnell. The first of these, called St. George's College, receives boys from all parts of the island, and in it the English, French, and even Spanish languages are taught, as also the elements of the Latin and Greek, with history, geography, the mathematical sciences, and the Catholic doctrines. It is a day-school, under the superintendence of Catholic clergymen. There are at present 57 pupils ; the charges being four dollars per month.

The second seminary, called "The Convent," and which is established for the education of young ladies, was founded by the ladies of "St. Joseph," a religious sisterhood originating in France, a few years ago, for the special purpose of diffusing instruction throughout the colonies. The seminary of St. Joseph has a complete appointment of nuns for the different branches in the education of youth. The English and French languages are taught therein, together with sacred and profane history, geography, and arithmetic; needle and fancy work also form an essential part of the training; music and drawing constitute separate branches as accomplishments. Eighty pupils are boarded, and forty more received as out-door or day scholars. The boarded pupils are divided into two classes—those who are found in all necessaries by the establishment, and those who are dieted by their parents. The average charges for the former may be estimated at 200 dollars, and for the latter at 120 dollars a year. Day scholars pay from three dollars to four dollars per month. There is a chaplain attached to the convent.

The seminary of St. Joseph may be regarded as a blessing to the colony, and certainly is an institution *unique* in the West Indies. Unaided externally as it is, it supplies gratuitous instruction—consisting of reading, writing, scripture, history, the four elementary rules of arithmetic, needlework, and the church catechism—to more than 300 poor girls, and a higher education to 120 more.

Irrespective of these two seminaries, there are in the colony several respectable elementary schools for both sexes; and, in connection with the Church of England, the grammar-school established in the year 1856: it is placed under the direction of a clergyman, and subject to the management of the Ecclesiastical Board. In it are taught English, Latin, and Greek, history, geography, and the mathematical sciences. The charges are either £15 or £10, payable in advance and at three different terms; £15 without presentation, and £10 with presentation by one of the founders. There are, at present, 34 pupils under tuition at this academy. If to the ascertained number of children attending public schools, viz., 2,200, we add 250 more as representing the number of those received at the different elementary schools, we have a grand total of 2,450 children receiving instruction at the primary and other educational

establishments in the island, or the proportion of 3·50 per centum of the whole population. According to the census of 1831, there were 8,651 inhabitants able to read and write, and 4,719 able to read only.

Connected with the subject of education, I must here mention the "Public Library," formed in the year 1851. It is supported by the colonial government, the borough council of Port of Spain, and private subscription. The terms are moderate—being only £1 sterling per annum. There are at present eighty subscribers. The government contributes £500, the borough council £100, and the subscribers £80 sterling—according to the above number —towards the support of this useful institution. The library is under the control of a committee of management, chosen by the governor, the borough council, and the subscribers, in the proportion of one member to every £50 of contribution. The stock of books consists of 2,887 volumes, of which 1,934 are English, and 926 French; there are, besides, a few Spanish works—with maps, periodicals, and reviews. New works are added every year.

The library is open from seven to ten in the morning, and from eleven to six o'clock in the evening: the regulations may be considered as very liberal. Let us hope that this most useful institution will not fail from want of support.

Of the "press" I have very little to say. There are at present published in the colony—besides a "Royal Gazette"—a weekly and three semi-weekly newspapers, viz., "The Trinidad Reporter," "The Port of Spain Gazette," "The San Fernando Gazette," and "The Trinidad Examiner." "The San Fernando Gazette" is issued at that town, the others in Port of Spain. "The Port of Spain Gazette," which may be styled the supporter and organ of government, has been in existence for the last thirty years; the others for a comparatively short period. Many other newspapers have successively appeared in the field, but they have not outlived a term of more than four or five years—because, generally speaking, they have been the organs of parties, and even of individual pique, rather than advocates of the broad and intrinsic interests of the colony, and they were left unsupported, precisely because they did not *deserve* the public support.

Crime.—This is a subject the examination of which is of

great importance, and particularly so in an island wherein is congregated such an intermixture of so many different races, and in which there exists such a diversity of religious creeds. But this examination is at the same time replete with difficulty, inasmuch as comprehensive details are wanting in order to a thorough investigation of the subject. Such as I have been able to obtain, however, I hope, will lead to some interesting conclusions.

Return of prisoners committed to the Royal Gaol of Port of Spain, from the 1st of January, 1850, to the 31st of December, 1854, with particulars of their age, country, and religion :—

1850	1,174
1851	1,117
1852	1,055
1853	1,270
1854	1,168
Total	5,784

These 5,784 cases may be classed under these heads, viz.,—Felony, 316; Misdemeanour, 4,322; Debt, 1,146;—and are distributed as follows :—

Years.	Felony.	Misde-meanour.	Debt.	Grand Totals.
1850 . .	51	814	309	1,174
1851 . .	65	818	244	1,127
1852 . .	71	728	246	1,045
1853 . .	82	1,068	120	1,270
1854 . .	47	894	227	1,168
Totals .	316	4,322	1,146	5,784

In nearly all the above cases of debt commitments were made for sums less than £11 sterling. Of a grand total of 1,146 cases, 122 only were committed for sums above that amount.

Regarding felony and misdemeanour, there were, during the

whole period, 13 commitments for murder and manslaughter, viz., 2 in 1850, 2 in 1852, 2 in 1853, and as many as 7 in 1854. Amongst the latter were three Chinese, for the murder of one of their countrymen, and two Coolies. There were altogether 9 commitments for arson, 32 for burglary, and 63 for cutting and wounding.

Murder and manslaughter are generally the results of revenge; and I recollect only one case, since emancipation, wherein a man was murdered with the view of appropriating money. The crime of arson is of very frequent occurrence. Magass houses, in which the cane refuse or magass is stored as fuel, are generally selected as being the more easily fired; it is, however, with the greatest difficulty that the perpetrators can be discovered or apprehended. There were in the above years an annual average of thirteen cases of cutting and wounding; and how many more were, and are, never brought before the magistrate! For the negro very much resembles the school-boy, who prefers silently to suffer rather than call for the interference of his master. The weapon most commonly used in such cases is the cutlass, an agricultural tool, which is too often turned into an instrument of malice and revenge. The negro is irritable, obstinate, and vindictive, so much so that, whenever his passions have been roused by contention or stubborn opposition, they become unmanageable, and he then strikes his opponent with whatever weapon he can grasp. 1296 cases of theft, or 259 as a yearly average, show to what an extent the practice of stealing is carried; but in how many cases is information not lodged on the offended party recovering the stolen goods, or how many are disposed of by the injured party's summary procedure of inflicting corporal punishment on the thief.

There appear further on the list thirteen cases of rape: this is also a crime of rather frequent recurrence, and of which Africans chiefly are guilty. 418 cases of drunkenness, and 840 of breach of contract also occur, to the latter class of which offences the indentured labourers, viz., the Coolies and Chinese, mainly contribute the largest quota. To the above 840 cases may be added 254 more, for other infringements of the provisions of the Immigration Ordinance, and for which they alone are responsible: so that it may be safely affirmed that of 1,361 Coolies and Chinese committed to prison, during the five years ranging from 1st of

January, 1850, to 31st of December, 1854, not more than 300 were committed for the ordinary criminal offences. The Chinese particularly have proved very insubordinate in regard to the immigration regulations, a fact which, I think, is amply warranted by the great increase of offences since their arrival in the colony, viz., from a yearly average of 124 to 233. Matters, however, have improved since they were made more fully to understand the nature of their obligations.

Of the grand total of 5,784 offenders, 522 were females, and 5,262 males; giving the proportion of 9·92 of the former to 100 of the latter: of the 522 females, 149 were committed for debt.

The following Table shows the age of the offenders:—

Years of Age.	12 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70
Totals for Years.	53	446	976	2,138	713	769	272	224	78	62	19	13
Yearly Averages	10·60	89	195	428	143	154	54	45	16	12	4	2·60

The by far greater number of offences is between the ages of 25 and 30: it is to the grand total as 37 to 100. Next comes that of 20 to 25, so that the number of offenders between 20 and 30 years of age is to the same standard as 54 to 100. The number is also large between 15 and 20; but there is at once a great decrease from 40 to above.

As regards the mental cultivation or other training of the prisoners, at their commitment and discharge, I find that for the years 1850, 1851, and 1854, 607 could read and write, which gives the proportion of 17·50 educated to 100 uneducated: 169 also learned to read and write during their confinement, and 79 were discharged after having acquired a trade during that period.

The mortality among the prisoners, as might have been anticipated, has been very small. In addition to 33 deaths caused by cholera, the mortality was, during the five years, 76, or 16

every year on an average, which gives the ratio of 1·36 per cent. —a result highly satisfactory.

If we take separately the different classes into which the population may be said to be naturally divided, we arrive at some interesting conclusions, and such as are highly gratifying, so far as the natives of the island are concerned.

Natives of Trinidad, 782; yearly average, 156.

Natives of Africa, 950; yearly average, 190.

Natives of Asia, 1,462; yearly average, 292.

Natives of Great Britain and British possessions, 2,280; yearly average, 456.

Natives of foreign countries, 473; yearly average, 95.

Except as regards Asiatics, we may take the returns of 1851 as representing the number of individuals belonging to each class. I think I can safely increase the number of Asiatics by 2,500, making their total number in the island 6,700.

We then have the following results:—

Natives of Trinidad, 156 offenders; population, 40,584—ratio, 0·38 per cent.

Natives of Africa, 190; population, 8,150—ratio, 2·33 per cent.

Natives of Asia, 292; population, 6,700—ratio, 4·35 per cent.

Emigrants from other parts, 550; population, 16,658—ratio, 3·30 per cent.

If we deduct from the number of offences committed by Asiatics, those which may be regarded as breaches of the immigration regulations, we shall have about 300 cases of ordinary offences, giving a yearly average of 60 cases, or the ratio of 0·89 per cent.; and immigrants from the British West India Islands would then stand in an unenviable pre-eminence amongst the inmates of the Royal Gaol, as appears from the following considerations:—Grenada, Barbadoes, Montserrat, and St. Christopher, supply the larger amount of offenders, the yearly average being respectively 68, 53, 50, and 49: so that the average number of prisoners from the three first islands is greater than that of the natives of Trinidad. Among foreign countries, Venezuela, France with her possessions, and the United States of America, contribute nearly the same proportion, the respective numbers being 29, 22, and 21 per annum. It now remains for me to perform the gratifying task of exhibiting the merits of Trinidad as compared

with the different countries from which she receives her supply of immigrants. Her proportion being only 0·38 per cent., is 6·13 times less than that of Africa; 11·44 less than that of Asia; and 8·68 less than that of the other countries.

If we take the religion of the offenders as a starting point for comparison, we arrive at the following remarkable results:—

Church of England.—2,473 offenders; yearly average, 495; members, 17,000; ratio, 2·95 per cent.

Catholic Church.—1844 offenders; yearly average, 369; members, 45,000; ratio, 0·82 per cent.

Wesleyan Methodist.—52 offenders; yearly average, 10·40; members, 2,550; ratio, 0·41 per cent.

Presbyterians.—64 offenders; yearly average, 13; members, 1,050; ratio, 1·23 per cent.

Baptists.—1 offender; yearly average, 20; members, 449; ratio, 0·04 per cent.

Mahometanism.—48 offenders; yearly average, 10; followers, 1,025; ratio, 0·97 per cent.

Heathenism (Chinese and Hindoos).—1,342 offenders; yearly average, 268; adherents, 6,700; ratio, 4 per cent., and only 0·89 if we take 300 as the average of ordinary offences for the five years, and 60 as the yearly average.

The Church of England gives the largest number of offenders, viz., 2·95 per cent., which is attributable to the influx of the dregs of the old colonies.

The Roman Catholic church gives 0·82 per cent., or three and a half times less than the Established Church. By taking all the Protestant communities collectively, we have the following result: 2,599 offenders; yearly average, 520; members, 21,500; ratio, 2·41. And yet, as already mentioned, the Catholic church labours in this colony under many disadvantages; its members are scattered all over the colony, and they, on an average, receive a far less share of attention than the other sects, in consequence of the paucity of ministers. What might not be the results, did the Catholic church receive that share of support to which it is entitled by treaty, and by the precedent of years,—a support which the above statistical facts prove it well deserves, but which our rulers dispute, or, at best, dole out with a reluctant hand.

By taking the different counties separately, we arrive at the following conclusions:

County of St. George—2,495 offenders: males, 2,228; females, 267; felony and misdemeanour, 2,265; debt, 230; yearly average, 499; population, 39,639; ratio, 1·25 per cent.

County of Victoria.—1,271 offenders: males, 1,163; females, 108; felony and misdemeanour, 987; debt, 282; yearly average, 254; population, 10,000; ratio, 2·54 per cent.

County of Caroni.—548 offenders: males, 521; females, 27; felony and misdemeanour, 456; debt, 92; yearly average, 109; population, 7,300; ratio, 1·60 per cent.

County of St. Patrick.—389 offenders: males, 358; females, 31; felony and misdemeanour, 382; debt, 7; yearly average, 78; population, 4,650; ratio, 1·67 per cent.

Counties of St. David, St. Andrew, and Nariva, unitedly.—18 offenders: males, 16; females, 2; felony and misdemeanour, 12; debt, 6; yearly average, 3·60; population, 2,349; ratio, 0·76 per cent.

The county of Victoria has the largest proportion of offenders; viz., 2·54 per cent. St. Patrick comes next, its proportion being 1·67 per cent. The county of Victoria is the most important agricultural district of the colony; but, at the same time, the one which shows the lowest proportion of small independent proprietors, as well as by far the greatest number of day or estate labourers, and though in it is also congregated the largest contingent of immigrants, yet very little or no ground provisions are raised. The population of the villages, and of the suburbs of the town generally, may be characterised as turbulent and insubordinate.

There is also a great proportion of immigrants in the county of St. Patrick; viz., at Cedros and Oropouche: this latter ward is mainly inhabited by half-savage Africans, and nearly all cases thence are of felony and misdemeanour. There are in this district a good many small proprietors.

Next to the county of St. Patrick comes that of Caroni, which gives the ratio of offenders at 1·60 per cent. In this county are located many immigrants, especially in Couva and Savonetta, and the average of small proprietors is comparatively very large.

In this district, the proportion of debtors is much larger than in that of St. Patrick.

The proportion of small proprietors is very great in the county of St. George, and that of immigrant labourers comparatively small; but the population of the town of Port of Spain represents two-

fifths of the entire population of the county, and it is well known that towns generally supply a large number of offenders. The proportion of debtors is three times less than in the county of Victoria.

Mayaro, St. David's, St. Andrew's, and Nariva, give the very low ratio of 0·75 per cent. In these counties the immigrants are very few, there being at present not one single large estate in cultivation, and consequently few day or task labourers. I am bound, however, to remark that the administration of the law is extremely lax in these counties, owing to the remoteness of the different sections. For instance, there is but one stipendiary magistrate for the counties of Mayaro, St. Andrew, and Nariva, and only one justice of the peace; and for the last eleven months no session has been held at Mayaro, on the plea of economy, or rather of deficiency in funds. Now the steamer "Lord Harris" receives a grant of £8 sterling each day it plies between Port of Spain and San Fernando, and the "ice establishment" also receives encouragement from the colonial treasury, and yet a population of 2,349 souls is, without compunction, left in an unprotected state! It will be conceded, however, that the social position of individuals cannot but have its influence, and that a powerful one, on the perpetration of crime, particularly of offences against property; it is, hence, undeniable that the small cottager who can live independently by cultivating his own land, is less exposed to the commission of crime than the day labourers who live in a crowded state on a sugar estate, and are wholly dependent upon money wages, paid weekly or fortnightly, for their subsistence. It may be objected that the estate-labourer is more comfortable, generally speaking, than the cottager. Granted; but under our present system he ought to be still more so than he really is, for his lodging is free, and he neither pays taxes nor is burdened with house-repairs; whereas, on the other hand, the cottager, though conscious that the pressure of these very burdens should urge him to increased exertion, does not seek to realise his independence by cultivating his land to the degree he might and ought. Evidently, however, this cannot invalidate the principle I have laid down; and I have no doubt that were it practicable to induce the labourers located on estates to cultivate their own small patches of garden-land, the number of offences would greatly decrease in the rural districts.

I cannot conclude this chapter on criminal statistics, without giving expression to a regret that there is not, in connection with the Royal Gaol, a house of correction for young offenders; and what would be better still, a "penitentiary farm," where they would receive primary instruction, religious education, and industrial training. Such an establishment has proved highly beneficial in France. I must, however, in justice say, that the gaol of Port of Spain is conducted, as far as may be, on excellent principles, by the present keeper, Mr. Daniel Hart. The majority of prisoners are employed in public works, to the great benefit of the country, and of their own health, as shown in the low rate of mortality among the prisoners; it being only 1·47 per cent. for the four years 1851, 1852, 1353, and 1854, not including 49 deaths by cholera, and 29 amongst insane persons.

The following table, showing the proportion and the particulars of the principal offences for which prisoners were committed during the five years already mentioned, will prove interesting to the reader.

Offences.	1850.	1851.	1852.	1853.	1854.	Average.
Arson	—	3	3	2	1	1·80
Assaults	140	137	104	146	72	119
Breach of Contract	110	142	121	237	230	168
Burglary	2	11	4	12	6	7
Cursing and Swearing	44	42	34	54	26	40
Cutting and Wounding	12	9	13	19	10	12 60
Debts	237	247	245	233	226	237
Drunkenness	132	112	75	75	20	83·60
Insubordination and Resistance to Police	36	32	50	37	34	38
Keeping Disorderly Houses	4	4	2	—	—	2
Murder and Manslaughter	2	—	2	2	7	2·60
Riotous and Indecent Behaviour	35	13	4	5	5	12
Rape	1	2	2	8	5	3
Self-exposure	33	25	20	18	4	20
Theft	293	248	224	265	266	2·59
Infringement of Immigration Ordinance	—	—	38	50	194	56·40

CHAPTER VI.

GENERAL ADMINISTRATION — GOVERNMENT — CIVIL, JUDICIARY, ECCLESIASTICAL, AND FINANCIAL DEPARTMENTS.

UNDER the Spanish dominion, Trinidad was a dependency of the "Capitania-General de Caracas," and was administered by a governor, assisted by the "illustrious cabildo"—a kind of municipal corporation, vested with extensive powers and enjoying great privileges.

This corporation was a self-elected body, exercising jurisdiction partly general, partly municipal and judiciary. It consisted of the governor, as president, and twelve members—two of whom were elected "alcaldes" of the first and second election, or "alcaldes" in ordinary. It was lawful for the cabildo to levy duties and impose taxes, but their municipal jurisdiction did not extend beyond the limits of Port of Spain. The town had been divided into four "barrios" or wards, and an "alcalde de barrio" was appointed to each by the cabildo. Their functions were similar to those of the commandants, which I will define hereafter. The "alcaldes" in ordinary had special charge of the streets and markets. The alcaldes in ordinary exercised their judicial powers in criminal as well as in civil matters, assisted by a Spanish lawyer, acting as assessor or adviser; and, for nearly eight years—from 1808 to 1814—they held both the civil and criminal sessions. No case, however, involving forfeiture of life was ever decided by these judges, after the island became a British possession.

Don Jose Maria de Chacon—the last governor under the Spanish rule—had divided the island into numerous small districts called "quarters:" to each was appointed a "commandante" as chief and sole magistrate; for he was, at the same time, police magistrate, justice of the peace, and administrator of his district, charged with the return of population and property, and the collection of taxes. They held petty sessions, and had the power of fining and condemning to prison; they acted also as coroners. All judicial summonses and citations were sent from the supreme

courts in Port of Spain to these officers, whose certificate was a sufficient proof of service. These important functionaries were allowed an "alguazil," or constable, as an executive officer, who was paid a small salary, raised by an alguazil-tax levied on every estate. The commandant was always one of the most respectable inhabitants of the quarter, and his office purely honorary.

Colonel Picton, on taking charge of the island after its capitulation, made no alteration in that administrative arrangement, but chose, in addition, from amongst the most influential inhabitants, "assessors," who formed a "council of advice," which may be regarded as the origin and foundation of the "Council of Government" which succeeded, and was afterwards changed into the present "Legislative Council."

The powers and duties of the "illustrious cabildo" and "commandants of quarters" were gradually modified, until they became extinct in the years 1840 and 1849, by the adoption of the ordinance constituting the "Town Council of Port of Spain," and of the territorial or warders' ordinance.

The "Court of Alcaldes in Ordinary" was abolished in the year 1823, and the judicial jurisdiction of the cabildo became extinct. In the year 1840 an ordinance was passed for "regulating the powers and constitution, and settling the mode of election of the members of the corporate body called the 'Illustrious Cabildo' of the town of Port of Spain, and changing the name thereof to that of the Town Council of Port of Spain." The qualifications for electors were, residence in or within three miles of Port of Spain, and the payment of an annual house-rent to the amount of ninety-six dollars; in addition to which, councillors were to be worth £500 free of all debts. The council was thus rendered elective; but the governor still retained the presidency over, and an absolute veto on, the proceedings of the town council. In the year 1852, a petition was addressed by the town councillors to the governor in council, praying for a new constitution based on the same principles as those embodied in the Municipal Act of England. The prayer was granted, and the name of the "Town Council" changed into that of the "Borough Council of Port of Spain." The franchise, at present, is, for electors, the occupancy of a house within the borough, rated to the house-tax at an annual rental of not less than twenty pounds sterling; for councillors and auditors, to be on the burgess list,

and be possessed, as absolute owners or tenants for life, of some household, or other estate or freehold of real property, assessed to the house-tax at an annual value of no less than £50, or at a rental of no less than £75 per annum. The council is presided over by a mayor, with a salary of £300 a year. It appears, from this statement, that the town of Port of Spain has been in the enjoyment of municipal institutions since before the conquest of the island by the British forces. Similar privileges were granted to San Fernando in the year 1840. The qualifications for burgesses are the same as in Port of Spain; they are for councillors and auditors, £30 and £40, instead of £50 and £75.

When protectors of slaves were appointed, a part of the powers of the commandants was transferred to those officers; in the year 1834 the stipendiary magistrates superseded them in their judiciary functions; the appointment of commissioners of roads, in 1846, contracted their jurisdiction within still narrower limits; and, finally, the "quarters" having been consolidated into wards, in the year 1849, the functions of the commandants ceased entirely; and, let it be remarked, without the slightest compliment on, or remuneration for, their services, although several of them had performed their gratuitous, onerous, and multifarious duties for upwards of twenty years, and had expended much of their private funds in the service of the colony.

At present the government is somewhat differently constituted from what it was under our first governors; and the changes introduced are chiefly due to Sir Henry Macleod, and to his successor, the Right Honourable Lord Harris.

Trinidad is a "crown colony," under the control of the Colonial Office, the government of which is administered, locally, through a resident Go nor, assisted by an island executive, and a legislative council. On several previous occasions attempts had been made to obtain a representative form of government; and, for the last time, in the year 1853, but without success, they were opposed both here and at the Colonial Office.

Executive Council.—It consists of the Colonial Secretary, the Attorney-General, and the Commander of the Forces, under the presidency of the Governor. It is a mere consultative body, which the governor calls together on important occasions, in order to have their opinion, which he may follow or not, as he pleases.

Legislative Council.—This council consists of the Governor as

president, and twelve members, of whom six are official, and six non-official. The official members are the colonial secretary, the chief judge, attorney-general, solicitor-general, receiver-general, and superintendant of immigrants. Previous to the offices of treasurer and collector of customs being consolidated into that of receiver-general, these officers were *ex-officio* members; and when the Bishop of Barbadoes—who has jurisdiction in Trinidad—is in the colony, he is entitled to a seat and a vote at the board. The non-official members must be British-born subjects; they are nominees of the crown, and chosen from among planters and merchants, to the exclusion of professional men and others.

The position of the chief judge, as a member of the legislative council, is a rather delicate one, since he may be called upon to give, at the board, his opinion on matters which will have, afterwards, to be decided on the bench.

The legislative council discusses and adopts such ordinances and measures as are introduced or proposed by the governor, or any member of the council. To become law, all measures passed by the council must receive Her Majesty's sanction. Ordinances which have been neither disapproved, nor formally approved within two years of their having been passed, become void and null. Generally, whenever any member proposes a legislative measure, he must himself prepare it in a legal shape—an objectionable course, in my opinion, because it is almost impossible that, under such circumstances, some glaring errors should not creep in, and render the law defective. It may also happen that such a measure, though passed in council, is not transmitted home for confirmation, and thus becomes null after two years. This was the case with the ordinance establishing vestries for the Roman Catholic churches in this island. And yet it was seriously stated that it was the fault of the Roman Catholics, since they ought to have asked for its transmission home, and for its confirmation.

The legislative council discusses also and votes the estimates for each year, in the month of May. The items may be ranged under two heads, viz., the fixed and the unfixed establishments. The estimates, as regards the fixed establishments, are laid before the board, as a mere matter of form, and are not submitted for discussion. Members, however, may propose alterations in the shape of resolutions, which are transmitted to the Colonial Office

for consideration. The unfixed establishment is regulated every year. All motions for money must come through the governor. There are regular meetings of the board, on the first day of each month, or on the day following, should the first be a Sunday; and at any other time the governor may think proper to call the members specially together; and the board is to sit from day to day, until the standing business is disposed of. The president and six members to form a quorum. In the absence of his Excellency, the senior member presides. The sittings are public, and the proceedings reported in the newspapers of the colony.

It is before this board, then presided over by the chief judge, or, in his absence, by the senior member of the council, that each new governor takes the oath previous to entering into office.

The governor is vested with extensive powers; and, as he has the uncontrolled appointment of all officers who are not on the fixed establishment, he can suspend and dismiss them without referring to the Colonial Office: all others he can suspend from office—even the members of council—until Her Majesty's pleasure is made known. He may require at the council-board the attendance of all the members, and exact that of the official section. The chief judge being, by position, the only independent member of this section, the governor may be said to have the command of the votes of the officials; and he can, with a little stratagem and his own casting vote, form a majority on any important question he wishes to carry or oppose. He has also the control of the public funds; and the receiver-general, it seems, is justified in paying out any sum of money on the governor's warrant. By royal instructions, he is not authorised—except in urgent cases—to order the payment of any sum of money above £200, without special authority from the secretary of state, and previous sanction by the board; and yet, seldom does a year pass away without some such infraction on the part of the governor. He can also veto any measure passed by the legislative council.

General Administration.—This may be considered under five different heads: administrative, civil, judicial, ecclesiastical, and financial.

Administrative Section.—As I have already stated, Lord Harris introduced, in the year 1849, a new territorial division of the island, which was accordingly partitioned into two grand sec-

tions, the northern and the southern, each being subdivided into four counties; each county into two districts; and each district into wards, according to their population.

The common boundary of the two grand divisions is formed by a line running from Point Manzanilla westward, and following the course of the river Lebranche; then along the summits of the Middle Range to Mount Tamana; thence, west-south-west to Montserrat, and from that point, due west to the Gulf of Paria, south of Point Savanetta.

The four counties in the northern section are, St. George and Caroni, St. David and St. Andrew.

The four counties in the southern section are, Victoria and St. Patrick, Mayaro and Nariva.

There exist, at present, forty-one wards, viz., twenty-six in the northern, and fifteen in the southern section. The county of St. George comprises the larger number of wards, viz., eighteen; Caroni, five; St. David and St. Andrew, two each; Victoria and St. Patrick, six each; Nariva and Mayaro, one each.

Under the administration of Lord Harris, a warden—a resident of the ward as far as possible—was appointed over each ward, with a salary of £100 per annum, payable from the ward funds—this sum being allowed as a compensation for clerk and stationery; and whose duty it was to prepare the assessment-roll, to keep the roads in repair, to levy the ward-rates, with other local duties, &c.

Local rates were declared to be for local purposes; they being levied at not more than six per cent. on the value of land, and seven and a half on the rent or assessed rental of houses. There were, besides, duties levied on licences for the retail of spirits and fermented liquors; also for huckstering, burning coals, cutting timber, &c. These formed the local revenues. The local expenses were for the roads, education, charity, relief, general and local police, &c.

The warden's ordinance has been already amended—partly, or *in toto*—four times, the charges of the wards being increased each time. Before leaving the colony, Lord Harris had admitted, in a review of the various acts of his administration, that the ordinance had, on a whole, worked satisfactorily; but that it required such amendments as experience had suggested. What new changes would his lordship have introduced? I cannot say;

but in the month of August, 1854, an ordinance was proposed by his Excellency Rear-Admiral Elliot, and passed, " making certain amendments and alterations in the warden's ordinance, and making it lawful for the governor to form such and so many wards as he shall see fit into ward unions, and to appoint one warden for the several wards comprised in such union."

The governor has, accordingly, ordered that the several wards of the colony should be distributed into the following, viz.:

Diego-Martin Union—comprising the wards of Chaguaramas, Chacuchacareo, Corenoge, Diego-Martin, Mucusapo, and Maraval. Salary of the warden and commission, according to abstract of accounts for the year 1855, 1,749 dollars.

St. Ann's Union—comprising the wards of St. Ann, Laventille, Cimaronero, Aricagua, and Santa Cruz. Salary and commission, 1,950 dollars.

Tacarigua Union—extending over the wards of St. Joseph, Maraccas, Tacarigua, Caura, and Lower Caroni. Salary and commission, 1860 dollars.

Arima Union—including the wards of Arima, Upper Caroni, Guanupe, Tunne, and Manzanilla. Salary and commission, 1,545 dollars.

Mayaro Union—consisting of the two wards of Mayaro and Nariva. Salary and commission, 735 dollars.

Toco Union—formed of the wards of Toco and Blanchisseuse.

Couva Union—comprising the wards of Chaguanas, Carapichamia, Couva, Savanetta, and Pointe-à-Pierre. Salary and commission, 2,170 dollars.

North Naparima Union—extending over the wards of North Naparima, Savannah Grande, northern and southern. Salary and commission, 2,525 dollars.

South Naparima Union—comprising the South Naparima eastern, and South Naparima western wards, also the ward of Orapouche. Salary and commission, 2,040 dollars.

Cedros Union—including the wards of La Brea, Guapo, Irvis, Cedros, and Erin. Salary and commission, 1,340 dollars.

Separate and distinct accounts are kept of the moneys and liabilities of each ward comprised in any union, the moneys of one ward not being applicable to the uses of another; and the rates leviable for the purpose of roads are distributed amongst the different wards forming the union.

The moneys are kept in separate accounts in the treasury, and paid out on the order of the governor. The total expenditure of the unions for the present year, 1856, is calculated at £22,000, or 105,000 dollars.

Taking all the wards together, we have the following items for the past year, 1855.

Expenditure and receipts of the wards during the year 1855:

EXPENDITURE.

	Dollars.
Cholera expenses	10,364
Roads and Bridges / Road debts	38,636
Education	9,546
Registration	1,489
Hospital and Charity	7,599
Police, general	8,432
„ wards	4,977
Criminal justice	1,145
Warden's salary and commissions	15,955
Printing and advertising	1,147
Miscellaneous	3,143
	102,533

RECEIPTS.

	Dollars.
Balance in Colonial Treasury on 1st October, 1854	31,489
Arrears of rates	8,957
Charcoal and timber licenses / Ward rates	90,529
Miscellaneous	2,888
	133,865
Balance in favour of wards on 1st October, 1855	31,332

Thus the balance in the treasury, at the end of the year 1855, is very nearly equal to the amount that was there at the end of 1854, viz., 31,489 dollars; and that sum is nearly equal to 39 per cent. of the whole expenditure of the wards, viz., 102,533 dollars; and it is more than that, if we deduct the extraordinary expenses for cholera, amounting to the sum of 10,361 dollars, leaving for current expenses the sum of 92,172 dollars. The expenses for the current year, 1856, are estimated at £22,000, or 105,600 dollars, after defraying which there will still remain in the treasury—supposing the revenues to be the same—a sum of 28,265 dollars.

The principal sources of revenue are ward-rates, 77,000 dollars; next, spirit licences, 12,070 dollars.

The principal items of expenditure are the roads and bridges, viz., 38,636 dollars; from this sum, however, ought to be deducted the interest of 4 per cent. on a loan of £25,273, equal

to 121,334 dollars, and besides a certain contribution towards the sinking fund. Next come the warden's salaries and commissions, 15,955 dollars, from which are to be deducted about 1,100 dollars arrears of salary, leaving a sum of nearly 15,000 dollars to be distributed between ten wardens, or at the rate of 1,500 dollars each; then 13,500 dollars are expended on the police, 9,545 dollars on education, and 7,600 dollars on charity.

If we take the different unions separately, comparing population and taxation, we arrive at the following results:—

Diego-Martin Union.—Population in 1851, 5,506. Receipts, 9,197 dollars. Proportion per inhabitant, 1·67 dollars. Rates, 1·28 dollars. Spirit licenses, 0·28 dollars.

St. Ann's Union.—Population, 6,564. Receipts, 16,637 dollars. Proportion, 2·48 dollars. Rates, 1·56 dollars. Spirit licenses, 0·35 dollars.

Tacarigua Union.—Population, 7,938. Receipts, 19,393 dollars. Proportion, 2·44 dollars. Rates, 1·49 dollars. Spirit licenses, 0·97 dollars.

Arima Union.—Population, 3,306. Receipts, 9,184 dollars. Proportion, 2·77 dollars. Rates, 1·73 dollars. Spirit licenses, 0·20 dollars.

Couva Union.—Population, 7,755. Receipts, 29,433 dollars. Proportion, 3·83 dollars. Rates, 1·76 dollars. Spirit licenses, 0·46 dollars.

North Naparima Union.—Population, 5,997. Receipts, 17,174 dollars. Proportion, 2·86 dollars. Rates, 2·28 dollars. Spirit licenses, 0·46 dollars.

South Naparima Union.—Population, 6,636 dollars. Receipts, 19,948 dollars. Proportion, 3·00 dollars. Rates, 1·83 dollars. Spirit licenses, 0·35 dollars.

Cedros Union.—Population, 3,158. Receipts, 12,140 dollars. Proportion, 3·84 dollars. Rates, 1·89 dollars. Spirit licenses, 0·30 dollars.

Thus the union in which each inhabitant contributes the largest proportion of local taxes, is Cedros, viz., 3·84 dollars; next, Couva, 3·83 dollars; and South Naparima, 3·00 dollars. Those wherein each pays least are Diego-Martin, 1·67 dollars; St. Ann's, 2·48 dollars; Tacarigua, 2·44 dollars.

Those in which the proportionate expenditure is greatest, are Couva, 3·21 dollars; Cedros, 3·08 dollars, and North Naparima,

2·80 dollars; and those in which it is less are Arima, 1·28 dollars; Tacarigua, 1·39 dollars; and Diego-Martin, 1·79 dollars.

Those wherein the inhabitants contribute the largest proportion of rates are Cedros, Couva, and South Naparima; and those wherein they pay the smallest proportion, are Diego-Martin, Tacarigua, and St. Ann's.

Those in which they contribute the largest proportion to spirit licenses, are Tacarigua, Couva, and North Naparima; those where the contribution is smallest, are Arima, Diego-Martin, and South Naparima.

Since writing the above, a statistical return for the ward unions of the colony has been published by order of the governor. It comprises one year, from 1st of January to 31st December, 1855. The results are somewhat different from mine, owing probably to the circumstance that the twelve months does not embrace the same period.

Total receipts under that return, 137,949 dollars. Total expenditure, 118,973 dollars. Balance in favour of wards on 1st of January, 1856, 18,976 dollars. The balance on the 1st of January, 1855, was 24,970 dollars.

Proportion of taxation, per inhabitant, under that return, Diego-Martin, 2·14 dollars. St. Ann's, 2·53 dollars. Tacarigua, 2·53 dollars. Arima, 3·09 dollars. Couva, 3·19 dollars. North Naparima, 3·56 dollars. South Naparima, 3·67 dollars. Cedros, 3·94 dollars.

The number of *ratepayers* is, in Diego-Martin, 1,007; proportion of rate to each ratepayer, 4·85 dollars. In St. Ann's, 1,609; proportion, 5·05 dollars. In Tacarigua, 1,125; proportion, 8·42 dollars. In Arima, 911; proportion, 6·73 dollars. In Couva, 1,051; proportion, 10·57 dollars. In North Naparima, 848; proportion, 13·37 dollars. In South Naparima, 408; proportion, 629·4 dollars. In Cedros, 292; proportion, 15·97 dollars.

Those unions wherein the taxation is greatest in relation to the number of *ratepayers* are, South Naparima, 43·46 dollars; Cedros, 42·78 dollars; North Naparima, 25·20 dollars; those in which it is least are, Diego-Martin, 9·13 dollars; Arima, 10·08 dollars; St. Ann's, 10·34 dollars.

This statistical return gives 213,292 as the total quantity of acres of land appropriated, and 52,807 acres as the extent actually under cultivation, or laid out in pasture grounds; amount cultivated in canes, 29,059; valuation of land, 2,745,843 dollars,

or at the rate of 12·87 dollars per acre; annual rent or value of houses, 208,987 dollars. This latter valuation cannot be regarded as a correct estimate, since, excepting the dwelling-house, or any house let out for rent, neither the labourers' cottages, nor any other buildings, whether for manufacture, stock, or otherwise, are valued on estates.

The towns of Port of Spain and San Fernando exhibit the following results:—

PORT OF SPAIN.—1855.

EXPENDITURE.	Dols.	Cts.	RECEIPTS.	Dols.	Cts.
Streets, scavenging	5,889	19	Taxes	14,855	05
„ repairs	3,319	97	„ arrears	4,873	90
„ salaries	2,552	00	Markets	9,067	85
Education schools and library	2,720	00	Real property	2,471	88
Charity Asylum	2,852	73	Licenses	1 906	55
„ Hospital	1,791	14	Cemetery	607	32
„ Charities	1,564	00	Penalties	245	20
„ Vaccine	700	00	Interest	1,005	72
Watch	908	65			
Salaries	2,960	00			
Buildings, rent, law-charges, &c.	8,703	00			
Cholera expenses	4,131	92			
	35,033	46		38,082	60

ABSTRACT OF EXPENDITURE AND RECEIPTS FOR FOUR YEARS, FROM 1851 TO 1854.

EXPENDITURE.	Dols.	Cts.	RECEIPTS.	Dols.	Cts.
1851	27,513	84	1851	31,368	77
1852	26,144	65	1852	25,608	02
1853	32,671	59	1853	36,402	16
1854	39,504	51	1854	30,057	51
Average	31,458	65	Average	30,859	11

The town of Port of Spain is somewhat differently situated from San Fernando and the wards, inasmuch as it does not contribute to the maintenance of the general police force; but, as a compensation, it is not entitled to the spirit licenses and wharf dues.

Nota.—I have not yet been fortunate enough to procure returns from San Fernando.

Civil Establishment. — His Excellency the Governor, £3,500; private secretary, £300: £3,800.

Colonial secretary and auditor of public accounts, £800; clerical assistance, £200; clerk of council, £150; first messenger, £160; second messenger, £120; allowances, stationery, &c., £150; ditto for cleaning offices, house-rent, and keep of a horse, £140; contingencies, £125: £1,845.

Keeper of Maps and Surveys.—The office of surveyor-general, which existed at the capture of the island, was abolished in the year 1853, and that of the keeper of maps and surveys established in lieu thereof. This officer is also escribano of the court of intendant. His principal function, however, consists in furnishing certificates of the plans lodged at his office, and he receives a fee of two shillings and sixpence or five shillings for each such certificate.

Keeper, £250; allowances, £20: £270.

Registrar-General.—This office was established by ordinances, Nos. 12 and 13, in 1847. The Registrar-General is also registrar of deeds. A fee, varying from ten shillings to twenty shillings, is exacted for the registry of deeds, and from two shillings and sixpence to three shillings for that of wills, probates, and letters of administration; also a fee of from sixpence to one shilling for searches in the office. The amount of those fees may be calculated at £900 per annum. There is, besides, a registrar of births, deaths, and marriages for the towns of Port of Spain and San Fernando, and for each ward respectively; these are paid, from the funds of the two boroughs and wards, a sum of one shilling for each registry of birth or death. In case such registration has not been entered in due time, the party in default pays a fine not exceeding £5.

Registrar-General, £500; clerical assistance, £200; allowance for stationery, £30; contingencies, £170: £900.

Harbour Master.—Harbour-Master of the island, £630; ditto of San Fernando, £100; signal men at the North Post and Fort George, £220; allowances and contingencies, £135 8s. 4d.: £1,085.

Superintendent of Public Works.—This office was established in the year 1845. Previous to its formation, the surveyor-general had the superintendence of all the public works; the engineer officer of the garrison, however, was

occasionally employed, and he was particularly so engaged, in superintending the construction of the government and court-houses. The office is, at present, held by Mr. Lewis Wainwright Samuel, a native of the island, who lately performed the task of bringing the Maraval water into town. He is also the engineer of the borough council.

Superintendent, £400; clerical assistance, £100; keeper of powder magazine, £50; allowances, and travelling expenses, £170: £720.

Post Office.—It was under the government of Lord Harris, that a regular postal communication was established between the different parts of the island. The mails are made up, for certain districts, every day, except Sunday; for others, twice a week, and for the remotest parts, only once a week. The service is performed by the police, and the letters must be posted with stamps. There is but one district, namely, in the chief town, where letters are distributed daily by a letter-carrier; in the other districts, the parties send for them to the different police stations.

Colonial Postmaster, £300; clerk, £100; contingencies, £50: £450.

Botanic Garden.—These grounds were laid out under Sir Ralph Woodford, at the governor's residence, St. Ann's, mainly with the object of encouraging the propagation of spice trees. Flowers and vegetables are, at present, the principal growth; but little or no encouragement is given to the cultivation and amelioration of fruit trees—in my opinion, a great oversight.

Botanist, £150; allowances for labour, £100; implements, repairs, £50: £300.

Agent in London, £80; allowances, office and stationery, £25: £105.

Judicial Section.—I have already stated, that the "illustrious cabildo," or more properly speaking, the "alcaldes in ordinary" were vested with judiciary powers, with the assistance of a Spanish lawyer. These powers, however, they exercised within reduced limits, since the majority of cases were decided by arbitration, each party choosing a friend as arbitrator; should these not have come to an agreement, they then chose an umpire, who sided with either one or the other.

Immediately after the capture of the island, Mr. J. Nihell was appointed chief-justice, deciding all cases submitted to him *according to his conscience.* Governor Picton, in 1800, established the "Court of Consulado"; Governor Hislap abolished this court in 1807, and re-appointed Mr. Nihell as chief judge. In 1808, however, the Colonial Office sent Judge Smith to Trinidad, with authority over all the tribunals of the island; he was also empowered to *hear appeals from his own decisions*, and the inhabitants have preserved in their recollections the case of "Vance," where the learned judge reversed his own sentence.

In the year 1814, John Bigge, Esq., barrister-at-law, arrived in Trinidad, as chief judge, both civil and criminal, and associated to himself, in criminal matters, Dr. Ramon Garcia, the assessor to their honours the alcaldes: appeals from his decrees were allowed to the governor, as judge of the court of appeal. The alcaldes in ordinary, however, continued to entertain actions in civil matters, concurrently with their assessor and the chief judge, until 1823, when the "court of alcaldes in ordinary" was abolished by an order in council of September, 1822.

By this, and another order of the same date, beneficial alterations were made in the judicial administration of the colony. The powers united in the administration of civil and criminal cases were separated; the "courts of criminal trial," and "first instance of civil jurisdiction" established; and a judge of "criminal inquiry" appointed. A "court of appeal," both in criminal and civil matters, was organised, with the governor as judge, and an assessor or assistant—his honour Antonio Gomez. He also assisted the chief judge in the "court of criminal trial," as also in that of "first instance of civil jurisdiction."

Judge Bigge was succeeded, in the year 1828, by Ashton Warner, Esq., of the Middle Temple, who died in September, 1830, much esteemed and universally regretted, both as a judge and a gentleman. His successor (in 1832) was his Honour George Scotland, of the Middle Temple, a talented barrister, who retired from the colony in the year 1849 on a pension, and was succeeded by the Honourable George William Knox, barrister, a native of the island.

At the arrival of Sir Ralph Woodford, in 1813, all suits of law were filed in the office of some "escribano," or public writer, whose duties, in the courts, were similar to those of the registrar

of the courts. There were several of these officers, and a suitor filed his action in the office of that escribano who best suited his purposes. The escribanos were also conveyancers, and had the custody of all original deeds prepared by, signed before, and attested by them; these officers being Spaniards, the deeds were drawn in the Spanish language. Such an arrangement was evidently liable to many and serious inconveniences, too evident to require to be pointed out. Sir Ralph Woodford, both with a view to provide a remedy, and to introduce the English language into the tribunals of the island, managed to obtain the surrender of the deeds into the custody of a suitable and responsible officer, by resorting to the following stratagem: he first called for an index to be furnished, by each escribano, of all deeds in his office, describing the nature and effect of the deed, the property transferred or mortgaged. The indexes once obtained, were verified by the island secretary and registrar, deposited in his office, and the governor thus got possession of the key to all the power vested in the escribanos. He next published a royal order in council forbidding the use of any other than the English language, either in drawing deeds or in judicial proceedings; and as few of the gentlemen filling the office of escribano understood that language, their functions ceased *de facto*, and the deeds in their possession were transferred from their custody into that of the island secretary, whose office then became the registry-office. In 1817, an order in council was promulgated, establishing a registry-office, and appointing a registrar of deeds, who also filled the office of secretary of cabildo.

The English practice and the English laws were gradually introduced. In the year 1844, the criminal law of England and trial by jury were adopted; the trial by jury in civil cases, in 1848.

The indiscriminate introduction of the civil law of England was opposed by Chief Judge Scotland, and, I believe, on good grounds. It was specially enforced under the government of Sir Henry Macleod and Lord Harris, with the ever-ready assistance of our present attorney-general, Honourable Charles William Warner: his predecessor, the lamented Edward Jackson, had shown more discretion.

At present, the judicial establishment consists of the following courts:—Supreme Civil Court, comprising the Complaint, Common Law, and Equity Courts—Petty Civil Courts—the Supreme

Criminal Court, and the courts of Petty Sessions—the Court of Intendant, and the Vice-Admiralty Court.

The judiciary *personnel* is composed of a chief justice, Honourable William George Knox, much respected for his impartiality, and his attainments as a lawyer and a scholar; a puisne judge, Honourable Herbert T. Bowen; an attorney-general, the talented Charles William Warner; a solicitor-general, Honourable George Garcia; the registrar of the courts, and the clerk of the judges. There are also eight stipendiary magistrates, two of whom are still paid by the home government; a commissioner for the town of Port of Spain, who presides over the Petty Civil Court; his Excellency the Governor, as judge of the Court of Intendant, with his assessor, Honourable H. T. Bowen, and two escribanos or clerks; an island marshal, with assistants.

The Complaint Court is held in Port of Spain on the first and third Friday of every month, except during the month of August; and from the 20th of December to the 1st of February. It has jurisdiction in all civil cases under £20, and is held before one of the judges: solicitors generally appear for the parties.

The Common Law Court is held before one of the judges and a jury of twelve: it has seven sittings in the year, and decides in all common law cases.

The Equity Court has a jurisdiction similar to that of the same court in England, and is presided over by the chief justice, assisted by the puisne judge.

The Supreme Civil Court has also jurisdiction in all cases of insolvency, and is conducted in the same manner as the Equity Court: this jurisdiction was established by special ordinance in the year 1845, and subsequently in 1852.

Petty Civil Court. This is a court having jurisdiction in Port of Spain only, and is presided over by a commissioner, John Cockerton, Esq., barrister, who is also the town-clerk: it takes cognisance of all civil matters not exceeding £10.

The Police Court of Port of Spain is held by the stipendiary magistrate of the William District of the county of St. George, John Stone, Esq., barrister. He gives judgment—subject to appeal—in all cases of minor importance; but, in those of a graver character, takes preliminary examinations, which he forwards to the attorney-general for prosecution before the Supreme Criminal

Court. This magistrate holds a court of petty sessions, assisted, when he deems such assistance necessary, by a justice of the peace. Several of these officers are appointed in each district: they are nominated by the governor, and chosen from among the most respectable inhabitants of the colony. The mayors of Port of Spain and San Fernando are justices of the peace in their respective boroughs; and the members of the Legislative Council magistrates throughout the island, under the ordinance regulating the mode of proceeding in criminal cases.

Rural Districts Courts. The island has been divided, for police purposes, into seven districts, viz.: two in the county of St. George, the eastern and western—the former comprising part of Caroni; county of St. David, one district magistrate residing at Toco; counties of Caroni and Victoria, one district each; county of St. Patrick, two districts; county of Mayaro, including Nariva, one district.

To each of these districts is appointed a stipendiary magistrate, with a clerk of the peace. This magistrate performs the duties assigned both to the commissioner of the Petty Civil Court and the stipendiary justice of Port of Spain.

The jurisdiction of all these minor courts is limited to fines not exceeding £10, and to imprisonment, with or without hard labour, not exceeding three months.

The important duties of coroner are also performed by the stipendiary justices, or, in their absence, by justices of the peace, who take the preliminary examination, find the verdict, and then forward the depositions to the attorney-general.

Supreme Criminal Court. A criminal session is held quarterly in Port of Spain, viz.: in March, June, September, and December, for the trial of criminal cases, before the two judges; and a jury of twelve is called to decide on the guilt or innocence of the accused. The prosecution is conducted by the attorney-general, or public prosecutor, who, on certain occasions, may be assisted by a member of the bar; or by the solicitor-general in case of need.

The verdict of the jury must be unanimous, or the jurors are confined for twenty-four hours without nourishment until they come to a final understanding, or are dismissed on some good ground. The highest term of imprisonment for each offence is four years, with hard labour during the entire period.

As there are many foreigners in the colony, French, Spaniards, Hindoos, Chinese, and others, there are twenty-five interpreters attached to the courts.

The island marshal is the executor of the judgments and orders of the highest courts.

Executions take place within the precincts of the Royal Gaol, in the presence of all the prisoners assembled, and a certain number of the public admitted for the purpose.

Appeal Courts. Appeal may be made from the decisions of the stipendiary justices to the judges. For all sums above £500, appeal may be made to Her Majesty's Privy Council in London. The governor has power to commute or remit imprisonments and fines; but in case of capital punishment, he can only recommend the culprit to the mercy of Her Majesty.

Court of Vice-Admiralty. A special commission has been issued to the chief justice of the colony to hold a Court of Admiralty whenever required: the attorney-general acts in all cases as the queen's counsel.

Court of Intendant. This court is, I believe, a relic of the old Spanish administration. Though certainly not established or maintained with any oppressive view, yet it may be said that on many occasions its decisions have been but the legal sanction of acts of oppression and injustice, as will appear from the following statements:—

The Court of Intendant sits in two capacities: as guardian and judge of the crown lands, and in all matters relative to quit-rent, land-rates, queen's revenue, &c.

As guardian and judge of the crown lands, the Court of Intendant consists of the Governor as judge, his Honour Judge Bowen as assessor, and the keeper of maps and surveys as escribano or clerk. All petitions, prayers, claims, &c., are brought by the escribano before the assessor, who examines into the matter, swears the parties, and issues his orders; he, however, occasionally consults or sits with the Governor, previous to issuing final orders. It is the duty of the escribano to satisfy the parties, and transmit the orders of the court. Lawyers may be employed by the defendants; in which case the attorney-general acts on behalf of the crown. In the case of recovery of debts, the assessor prepares and signs the writ, which is countersigned by the Governor and escribano. The latter sends to

the party concerned a copy of the judgment in which the epoch of payment is specified. In case the amount is not paid in due time, a new writ is issued, with an order to the marshal to levy on the property of the defaulter.

For the recovery of the land-tax or ward-rates, the Court of Intendant consists of the Governor as judge, his Honour Judge Bowen as assessor, and of the Governor's private secretary as escribano.

Before the passing of the Wardens' Ordinance, landed property paid only a tax of two per cent. towards the maintenance of the public roads. After the passing of the ordinance, a ward rate of six per cent. on the assessed value of land, and of seven and a-half per cent. on the annual rental value of houses, was levied for local purposes.

The establishment of a land-rate was a novel feature in our system of taxation, and many of the cottiers and small proprietors did not at first fully understand its operation and objects; as a consequence, some became defaulters through mere carelessness or incredulity, and had their properties put up for sale; others, who were incapable of paying the tax, or merely improvident, became, in like manner, defaulters. Many were actually defrauded by dishonest agents, who, instead of paying the money intrusted to them, applied the same to their own uses and purposes. These three classes formed at first the great mass of defaulters—a body more to be pitied than to be blamed or punished. Some who had not got good titles to the land they owned, became voluntary defaulters, with a view to securing indisputable possession by purchase before the doors of the Court. Finally, a minority, misled by bad advice, and strongly imbued with the idea that the government would not dare to enforce the law, exhibited refractory dispositions, and were justly punished by the sale of their properties. On the other hand, I ought not to conceal that too many were actually spoliated through the negligence of some of the wardens, or the malpractice of their authorised agents, though they had *bonâ fide* paid their rates. In proof of my assertion, I might mention more than one case, but am satisfied with relating the two following:—Mr. C. F. had his property advertised for sale; warned by a friend of the fact, he took no notice of the matter, since he knew he had paid the rate, and the property remained on the defaulters' list. Urgently

pressed to be on his guard, he prudently applied to the warden a few days before the sale, when he heard that the tax had not been received. On Mr. F. then producing a receipt signed by the warden's agent, the answer was, "that he could not be made accountable for an amount which had never been handed over to him," and Mr. F. was thus compelled to make a second payment. But how few ever did see the *Royal Gazette*, and how many could not read it, so as to ascertain whether they were or were not on the list of defaulters! The property of one Jean Créteau, in the ward of Lower Caroni, was sold, though he had the receipt of the warden. True, the sale was put aside by a decree of the court, because Mr. C. employed a lawyer; but this is a solitary instance of justice among many of oppression.

When the wardens' ordinance was first passed, the duties of the assessor were very onerous. He did the whole work of the court, and, after signing the orders, would transmit them to the governor for his signature and that of the escribano; nor was any deed signed by the governor, except after it had been approved by the assessor, who, on many occasions, consulted with his Excellency. But since and after the passing of the ordinance No. 14, 1854, all the functions of the court may be said to have become centred in the escribano. He corresponds with the wardens, puts up the properties for sale, examines and signs the conveyances, receives the money, and deals out the surplus, never consulting the assessor, except on rare occurrences of contestation.

In case of error, the court is never at a loss to act, either by amending, varying, reversing, or annulling its own acts. The error once discovered, a former order is declared null and void, and a new decree is issued reversing the same, or making any alteration, according to the circumstances of the case. This new order is notified to the parties in the usual form.

The law of 1854 was passed with the view to afford the means of remedying the evil, and granting the power to annul deeds already lodged in the Registrar's-General's Office. Thus, in the case of Jean Créteau, already mentioned, the deed of sale to Mr. J. Escalier was set aside, and the sale itself and its consequences annulled by the following decree:—

"COURT OF INTENDANT.

"6th January, 1855.

"The sale of the house and 16 acres of land, in Caroni, called 'La Palestine,' the property of Jean R. Créteau, is hereby set aside and annulled.

"H. T. Bowen.
"Chas. Elliot.

"Before me, J. S. Burke, Escribano."

The estate "La Cardonnière," situate in the ward of Mayaro, and containing 115 acres of land, had been returned by the warden as in default, though the rate had been paid on a part of the estate. J. S. Agostini, barrister, bought the same at the public auction, had the deed of sale duly registered, and immediately sold it to one Justin Noble, at a large profit, the deed of sale being also duly registered. The party who had paid the tax on the part of the estate petitioned the governor, and an order was issued annulling the sale, and prescribing the purchaser to return the property on being reimbursed the price and expenses. This Mr. Agostini opposed, on the plea of inconsistency and the impossibility of its being enforced, since he was no longer the owner of "La Cardonnière." Lord Harris, on due consideration given to the matter, and after obtaining the opinion of the attorney-general and chief justice, caused a new order to be issued, varying the second decree, and making good such part of it as had reference to that portion of the property upon which the tax had been paid.

It is provided in the ordinance of 1852, that any person purchasing a property put up for sale by the Court of Intendant, must pay the purchase money in cash at the conclusion of the sale—failing which, the property becomes forfeited to the crown, to the exclusion of the other bidders, and the detriment of the defaulter. It is useless to enter into explanations to prove the injustice of such a proviso, but I will mention two facts connected with the same.

The Mount Annan estate, situate in the ward of Carapichaima, had been advertised and exposed for sale, on the 28th of August, 1855, for the sum of 54 dollars, being arrears of ward-rates. Mr. E. D. Faure, who had some claim on the estate, offered the sum of 500 dollars; another individual having made a higher bid,

Mr. Faure desisted: the bidder being unable to pay in cash, the property was adjudged to the crown for the amount of ward-rates and costs—altogether 60 dollars 80 cents, and Mr. Faure's claim set at nought. On the 4th of September in the same year, the "Bronte" estate, situate in the ward of South Naparima, was, in like manner, exposed for sale by public auction, for arrears of ward-rates, to the amount of 295 dollars 62 cents. Mr. J. Spiers, a member of the "Legislative Council," bade for an absentee mortgagee, to the amount of 4,000 dollars, as far as I am informed: H. Huggins, Esq., one of the co-proprietors of "Bronte," overbid a larger sum, and had the estate adjudicated to him; but as he did not pay the purchase money, the property was declared forfeited to the crown for the paltry sum of 325 dollars, being principal and costs. The case was a hard one, and Mr. Spiers very properly remonstrated against this decision, offering to pay the sum for which he had bidden; but the law was conclusive. The property was, nevertheless, re-exposed for sale, and so was also the Mount Annan, which realised the sum of 510 dollars. These are strong precedents, undoubtedly; but the law has not been altered, and ignorant poor people remain subject to what I do not hesitate to call an injustice; and the more so, that it always rests with some unprincipled character to injure an enemy, by offering a sum which, in reality, he is unable or unwilling to pay.

The above remarks are not, of course, directed against the officers of the Court of Intendant; but they are made to show how defective is the constitution and organisation of that court, and how little protection is afforded to the tax-payers—nay, what indifference is manifested towards their interests and the rights of property. And to the point, I may mention the following rather remarkable fact, which occurred as late as the year 1855. The property of one John William, together with several others, was advertised for sale for the 11th day of September. One of the defaulters in the same ward—whose name I do not, at present, recollect—gave to his son, bearing the name of John William, the money wherewith to pay the rate, which was done; but, instead of giving his father's name, this John William gave his own, and the escribano credited John William, whose property was accordingly struck from the defaulters' list, whilst that of the father—the party who had really paid—was sold, and the

purchaser put in possession. The poor victim made application to the governor, and Admiral Elliot, being unable to interfere, generously offered 40 dollars to redeem the property, but with no success. Thus this unfortunate man lost, not only his land, but the amount he had paid, whilst the faulty party profited by the mistake. In this case no one, it may be said, was in fault: it was an error of person, and yet no remedy, it seems, could be provided.

In conclusion, not only is the property of the tax-payers left unprotected on many occasions, but they have been, and are still, exposed to many acts of injustice: the landowner may be actually spoliated, in consequence of some act perfectly independent of his own agency. Now I say, when justice proves so uncertain in its proceedings and decisions, so utterly powerless to remedy or avenge wrong, all confidence is lost, and respect denied to its authority. The Court of Intendant evidently requires remodelling, and its proceedings ought to be subjected to rules protective of the interests it deals with; especially as the ignorant and poor are likely to be the sufferers, and not those who are able to protect themselves: and the first step towards a change should be regular and public sittings, instead of the present secrecy preserved in all the proceedings of that court.

Judicial Establishment.—Chief Justice.—Chief justice, £1,500; puisne judge, £1,000; clerk to judges, £200; messenger, £110; allowances, £60: £2,870.

Registrar of the Courts.—Registrar, £600; clerical assistance, £430; allowances, £70: £1,100.

Court of Intendant.—Escribano, £300; allowances and contingencies, £35: £335.

Attorney-General.—Attorney-General, £800; clerical assistance, £200; allowances, £30: £1,030.

The Marshal.—In lieu of fees upon criminal processes, £350: £350.

Petty Civil Court.—Commissioner, £200; clerical assistance, £200; allowances, £8: £408.

Stipendiary Justices.—Stipendiary justice of the western district of the county of St. George, £600; four stipendiary justices at £300 each, and one at £200; five clerks of the peace at £200 a year, one at £150, and an assistant clerk at £62; allowances, £880: £4,092.

ECCLESIASTICAL ESTABLISHMENT.—The Church of England and the Roman Catholic Church are both supported by the government, but in a very unequal proportion, as shown by the following comparative statement.

CHURCH OF ENGLAND.	
Population in 1851, 16,250 souls.	
Archdeacon	£500
Five Rectors	2,000
Three Assistant Curates . .	300
Five Island Curates, and one Catechist	1,150
Clerks, Sextons, Chaplain to the Gaol	1,333
Allowances and Contingencies	520
	£5,303

Nota. A Rectory House and Glebe attached to each parish.

ROMAN CATHOLIC CHURCH.	
Population in 1851, 44,605 souls.	
Archbishop	£500
Nineteen Parish Priests . .	3,000
Eight Assistant Curates . .	980
Allowances, *nil.*	
Contingencies, *nil.*	
	£4,480

Nota. Since the voting of the estimates, Her Majesty has been pleased to increase the salary of the Archbishop to its former amount, viz., £1,000 sterling per annum.

EDUCATION.—The only contributions of government towards education are the salaries of the inspector of schools, £500; superintendent of model school, £250; teacher female school, £250; secretary to board of education, £50; contingencies, £100: £1,150.

MEDICAL ESTABLISHMENT.—Health officer, £100; public vaccinator, £108. Colonial hospital—visiting physician, £41 13s. 4d.; house surgeon, £400; dispenser, £150; clerk, nurses, and other subordinates, £290 13s. 4d. San Fernando hospital—medical superintendent and vaccinator, £300; dispenser, £100; nurses and other attendants, £87. Lunatic asylum—medical attendant, £50; warden and matron, £150. Leper asylum—medical attendant, £250; resident inspector, £150; dispenser, £50; nurses and attendants, £150; allowances, £50: £2,427.

POLICE AND GAOLS.—The general police force consists, at present, of an inspector and a sub-inspector, eight sergeants, and ninety-seven corporals and privates. There is, besides this police force, the local police, placed under the control of the municipal authorities and the wardens. This police force is insufficient for the requirements of the colony, especially when its extent is taken into consideration. For instance, there are only—if I am

correctly informed—two corporals and four constables allowed for the service of the extensive county of St. Patrick. In case of any disturbance at the Naparimas, the police force there stationed would be totally inadequate, as has already been shown, on occasion of a disturbance which took place between the labourers on " Les Efforts " estate and the people of " Bushy Park," a suburb of San Fernando.

Police. — Inspector, £350 ; sub-inspector, £164 ; clerk, £109 ; pay of sergeants and constables, £8,872 ; allowances, £850 : £9,745.

Gaols.—The gaol of Port of Spain is a handsome building, and the establishment itself is conducted on excellent principles. Prisoners are employed, within the court, in breaking stones, and in other manual occupations ; and outside, in quarrying at the Mora Forest, or in other public works.

It may be divided into three different quarters—viz., the felons' and misdemeanants' quarter, the debtors' quarter, and the lunatic asylum. The first quarter is itself subdivided into the felons' and misdemeanants' wards, and that of those awaiting their trial. Women are kept separate from men. The whole establishment is placed under the able management of Mr. Daniel Hart, the keeper. There are also, in the different districts, *depôt* prisons. It is in contemplation to build a prison in San Fernando, to be conducted on the same plan as that of Port of Spain. Should the financial position of the colony allow of such a construction, it would be a very great improvement.

Inspector of prisons, £100 ; physician, £166 ; keeper, £300 ; two clerks, £125 ; overseer, £120 ; twelve turnkeys, £910 ; matron and assistant, £70 ; allowance for a horse, £50 : £1,841.

Financial Department.—The financial department of the colony is conducted, at present, by the following staff of *employés* :—

Receiver-General.—Port of Spain : Receiver-General, £800 ; staff of clerks, £900 ; one landing-waiter at £300 ; three at £200 ; three lockers and a porter, £249. San Fernando : Sub-collector, £300 ; assistant receiver of taxes, £100 ; clerk and locker, £200 ; allowances, £150 ; contingencies, £300. Total, £3,899.

RECAPITULATION OF THE ESTIMATES FOR THE YEAR 1856.

FIXED ESTABLISHMENTS.	£	s.	d.
Civil Establishment	13,374	8	4
Judicial	10,185	10	0
Ecclesiastical	9,783	6	8
Education	1,150	0	0
Medical	2,426	19	4
Police and Gaols	11,637	8	4
Total	48,557	12	8
To this amount must be added a further sum of £27,648 6s. 8d.—viz., Pensions, Retired Allowances, and Gratuities, £1,663 6s. 8d.; Revenue Services, £50; Administration of Justice, £200; Education, £200; Hospitals, £3,400; Police and Gaols, £4,200; Rents, £1,700; Conveyance of Mails, Transport, £2,350; Postage, £1,000; Works and Buildings, £4,370; Roads, Streets, and Bridges, £1,800; Miscellaneous Services, £2,015; Interest, £200; Drawback and Refund of Duties, £3,000; Mora Forest, £1,500	27,648	6	8
Total estimated Expenditure for the year 1856	76,205	19	4

The following are the sources from which are expected the receipts to defray the expenditure :—

ABSTRACT OF THE PROBABLE REVENUE OF THE COLONIAL GOVERNMENT OF TRINIDAD, FOR THE YEAR 1856.

	£
Customs	58,500
Land Sales	300
Land Revenues	100
Licences	3,000
Postage	1,450
Fines, Forfeitures, and Fees of Court	2,500
Fees of Office	1,000
Sale of Government Property	100
Re-imbursements in aid of Expenses incurred by Government	7,000
Miscellaneous Receipts	100
Interest	500
Special Receipts	250
Legacy Duty	200
Mora Forest	1,500
	76,500

The following table exhibits the receipts and expenditure of the colony for a series of years, and at different periods:—

RECEIPTS.	£	EXPENDITURE.	£
1825	44,332	1825	35,958
1827	50,080	1827	54,015
1829	43,196	1829	36,584
1831	43,993	1831	42,527
1846	60,510	1846	55,510
1851	95,388	1851	106,239
1852	107,310	1852	110,944
1853	142,782	1853	119,231
1854	72,599	1854	99,743
1855	72,323	1855	80,657
1856 (estimated)	76,500	1856 (estimated)	76,205

It will be remarked that the receipts and expenditure for the two years 1852 and 1853 are unusually large. But the special receipts and expenditure on account of immigration were not then kept separately, as at present, but formed part of the general revenue and expenditure. This is the explanation of this otherwise inexplicable difference. Should we, therefore, add to the receipts of the year 1855 the special immigration receipts, amounting, as per statement published by order of the governor, to the sum of £30,846, we would then have a total of £103,169. As regards expenditure, I may observe that items defrayed, in those years, from the general funds, are now paid by the wards—say a sum of about £6,000, for roads, hospital relief, education, &c., which, together with a further sum of £14,674 paid on account of immigration, would increase the expenditure of the same year (1855) to the amount of £101,331.

If we add together the expenses incurred during the six years 1851 to 1856, we have a grand total of £593,019 against £566,902, being amount of receipts during the same period. Excess of expenditure over receipts, £26,117.

In the year 1831, the principal items of taxation were:— Exports (3½ per cent. *ad valorem*), £15,000; imports (at the same rate, except British linens, cottons, and cod-fish), £8,000; poll-tax on slaves, £10,000; house-tax, £2,500. The civil establishment then cost £10,000; the judicial, £7,000. The civil establishment now costs £13,374; and the judicial, £10,185.

In order, however, to come to correct conclusions regarding

the real amount of taxation contributed by the inhabitants, and of expenditure, it is necessary to add to the above amount of £80,657 the local and special receipts, and also the expenditure. Unfortunately, I have but few data on the subject.

LOCAL RECEIPTS (WARDS).	£
1852	21,309
1853	23,606
1855	21,328
Average	22,082
Port of Spain, average of five years	7,202

LOCAL EXPENDITURE (WARDS).	£
1852	20,455
1853	19,222
1855	19,202
Average	19,626
Port of Spain, average of five years	6,934
Contributions to the Immigration Funds (1855)	30,846

Thus, the amount of taxation contributed in the year 1855, by the inhabitants of this colony, may be calculated as follows:—

	£
General Receipts	72,323
Local „ (Wards)	22,082
„ „ (Port of Spain)	7,202
Special „ (Immigration)	30,846
Total	132,453

Estimated population, 70,000 inhabitants—less about 3,000 for the town of San Fernando, 67,000; or about 37 shillings, or 8·88 dollars, per individual; and the value of our exports being about £450,000, nearly 34 per cent. of our exports may be said to represent our productive industry.

Such is our position, as far as taxation is concerned; nor should we have reason to complain, were the money contributed by the tax-payers judiciously and prudently expended.

The colony has contracted a heavy debt for immigration, as well as local purposes. What part of that debt has been liquidated, and what still remains due? It is difficult to determine either point, the government maintaining, on this subject, a suspicious reserve. This much we know, however: the share of Port of Spain is about £27,000, for the reimbursement of which the householders pay one and a half per cent. on the annual rent of houses, amounting, in 1855, to £1,441; about £605 for the supply of water to the inhabitants, besides £152 received from the shipping, and £156 from the Board of Ordnance, or a total of

about £2,300. The share of the public roads is £28,278, and that of San Fernando £3,707—total, in round numbers, £58,000. The sum due for immigration purposes must be very large indeed, since we find that the sum remitted in the year 1855 for payment of interests and the sinking fund on loans, amounted to £12,000 sterling.

A balance-sheet, or financial statement, for the year 1855 was published in the month of February, 1856, by order of the governor, which we hereby annex. Receipts, £72,323 9s. 5d. Expenditure, £80,657 3s. 6½d. Excess of expenditure over receipts, £8,333 14s. 1½d.

In this balance-sheet there is no mention made of the debt incurred by the colony, excepting, however, that portion of it which was appropriated to the roads and the San Fernando wharf. But we find to the credit of the general revenue, the special receipts arising from the water-works.

STATE OF THE TREASURY ON THE 31ST OF DECEMBER, 1855, AS MADE TO APPEAR BY THE TRIAL BALANCE.

DEBTORS.		CREDITORS.	
James Thomson . . .	£40	Immigration	£36,518
George Ford (deficiency) .	6,145	Seaman's Hospital . .	1
Henry St. Hill (ditto) . .	3,142	Police Reward Fund . .	521
J. H. O'Brien . . .	455	„ Clothing Fund . .	4
Advances by Governor . .	60	Depositors in Savings Bank	5,414
Steamer "Paria" . . .	208	„ by the Courts .	10,837
San Fernando Wharf . .	3,707	„ by Insolvency .	809
Ward roads	3,766	Commissioners, South Naparima Ward . . .	538
Royal roads	21,511	Old Legacy Duty . . .	6,753
		General Account . . .	9,943
	£39,034		£71,338

The above figures call for a few remarks. It is generally granted that neither Thomson nor Ford will ever pay; it is a fact that St. Hill has already paid, and it is rather inexplicable that his name should be brought forward with the object of swelling the credit account of the treasury. Now, why have not legal suits been instituted against the proprietors of the steamer "Paria"? We consider ourselves justified in deducting from the credit side the sum of £9,327, there being then left only the amount of £29,707. In like manner, from the grand total £71,338, may

be deducted the sum of £6,753, old legacy duty, for building an hospital, since an export tax has been imposed for that purpose. There would then be on the one side, £64,585, and £29,707 on the other, leaving a balance of £34,000 against the treasury: to liquidate which we find in the hands of the Receiver-General, £5,686, and £18,285 in the *depôt* chest, or an amount of £23,971 to meet £34,000. Should the treasury be called upon to pay at once the sums deposited—say £54,642—there would remain unpaid a *minus* balance of £24,936. Under all circumstances, this would be a sad result; but with an impoverished community and precarious revenue, it is really deplorable. And such a state of things may be said to have been brought about by reckless proceedings, and the incorrigible profligacy of the government.

In the face of the above statement, a sum of £2,000 has been advanced to a private company for the purchase of a steamer—the advance to be borrowed from the immigration fund, and to be repaid, without interest, at the rate of £800 per annum, and by monthly instalments. A law has also been recently passed for establishing tram-roads in certain districts of the colony, for which a sum of £50,000 is deemed necessary; and it is proposed that the colony should issue debentures to that amount, that every such debenture should be made for the sum of five pounds, and should bear interest at the rate of six per cent., and that all moneys to be taken up on loan on such debentures should be charged on the general revenue of the colony. The repayment of such moneys is secured to the colony by a charge on the several plantations and lands through which such tram-roads shall be carried, and by tolls to be taken on such tram-roads.

In conclusion, though the Legislative Council is vested with extensive powers, they are still subordinate to those of the governor, whose acts they cannot control. The board, however, may exercise a certain check on the taxation and expenditure of the colony, by refusing their sanction to financial measures proposed by the executive, and by exacting a strict audit of the public accounts. This, however, they not only have never done, but they have, on the contrary, lent a pandering aid to all his acts—so much so, that for more than seven years the public accounts were never examined. On the other hand, the governor having the unfettered control of the finances of the colony, and being

in a position to know its liabilities, assumes a heavy responsibility, either in himself proposing or sanctioning measures which must increase, or even prevent the decrease, of such liabilities. The day of reckoning must, of course, come; and with that knowledge let us not lose sight of Jamaica, Antigua, and St. Vincent.

The amount of specie in circulation is taken in the blue book of 1853 at £40,000, and that of bank-notes, at £50,000. Sterling money was rendered the standard coin in the year 1845, previous to which period the Spanish or Mexican medium had prevailed: this consisted of the dollar — the subdivisions of which were—the quarter-dollar, the two-bit, bit, half-bit, and quarter-bit, or stampee pieces. There was also a local coin—the *cut-dollar*, or nine-bit piece—a certain quantity of silver, *supposed* to be equal to one bit, being cut out of the centre of the Spanish dollar. This was evidently a spurious one as regards intrinsic value. There has been also in circulation for several years a colonial coin, viz., the quarter-dollar, the one-eighth of a dollar, or five-stampee piece, and the one-sixteenth of a dollar, or the two-stampee and-a-half piece. The gold coin long continued to be purely Spanish or Hispano-American, viz., the doubloon or sixteen-dollar piece, the moida, or eight dollars, with the four and two dollar pieces.

At present, there is a variety of coins to be found in the colony Gold—besides the English, the Spanish (few), Peruvian, and other Hispano-American doubloons, the two and four dollar pieces, and the United States coin. Silver—besides the English, the Spanish and Mexican dollars, the half and quarter dollar, and two-bit pieces, and a very large ingredient of the French twenty-five centimes pieces, circulating here as half-bit or five cents, though their real value is only four cents. If it were not, however, for that small coin, retail transactions would be rather difficult. As a consequence of this promiscuous circulation, frauds have been often attempted, and more than once practised on the inhabitants, the victims being the lower and ignorant classes.

Banking. It would be superfluous to enter into details as to the disastrous consequences to individuals of the failure of the West India Bank: all suffered alike, the field labourers and the merchants; and very fortunate were the holders of the five-dollar notes, who managed to dispose of them at three or even two and a half dollars to persons who were indebted to the bank. On the

other hand, the Colonial Bank carries on here, I believe, a very profitable business. The exchange varies from 470 dollars to 490 dollars, allowance being made for time and amount: deposits taken at 3 per cent., and money discounted at 8 per cent.

No private bank has ever been established: rate of interest 8 and 10 per cent. on good security: small sums, however, are often borrowed from individual money-lenders at 15, 20, and even 30 and 40 per cent. for three, six, and twelve months, though this dirty trade is only practised by shameless usurers.

MEANS OF COMMUNICATION.—Roads and Bridges.—It cannot be expected that a country but comparatively recently settled, with only a belt along the sea-shore under cultivation, should possess a superiority of internal communication; and this is precisely the case with regard to Trinidad. Moreover, materials for making roads and keeping them in repair are not only scarce, but the metal being in general limestone, is not very durable, and is to be procured only from a few localities. The very nature of the soil itself—it being clay or clay loam—is, when coupled with the heavy rains, a very great obstacle to the formation of good roads.

A short review of the history of our road ordinances may be of some interest. During the prevalence of slavery, the commandants had the charge of making, repairing, and keeping the roads in repair. The free inhabitants of each quarter were compelled by law to keep the roads of their respective districts in good order, and to contribute, for that purpose, a certain amount of days' labour according to their amount of property. The commandant made an estimate of the number of days necessary for the repairs, and summoned each proprietor to supply his quota, the roads being partitioned among the different individuals, and generally the portion nearest to each individual's estate allotted to him as his share: the work was afterwards inspected, and if not properly performed, was required to be perfected.

Immediately after emancipation, it became necessary to change this system, and no less than *four* ordinances were enacted between the months of October, 1839, and March, 1844; or, at the rate of one ordinance per every ten months! In the year 1846, however, an ordinance was passed, providing for the making and repairing, and keeping in repair, the roads, bridges, and fences, in the island of Trinidad. This ordinance was made very comprehensive, and fully entered into the details of the subject. It divided

the colony into twenty-nine road districts, and provided for the appointment of road commissioners, by triennal elections, and of two auditors, and a treasurer, per district.

The commissioners had the management and care of the roads, bridges, and fences in their respective districts, with authority to regulate the roads already laid out, to alter, or discontinue those they might regard as useless; to ascertain and define others, and to make an assessment of two per cent. on all lands and houses within the district, according to certain fixed valuation—an allotted portion of the roads and funds being assigned to each commissioner. Accounts were delivered twice a year to the auditors for examination and approval, and reports forwarded to the governor every year, in the month of January. The treasurer received all the moneys, and applied the same to the expenses of the roads, as directed by the commissioners. There were certain penalties attached to commissioners, auditors, and treasurers, for neglect of duty; and also to persons making false or incorrect statements, or refusing to make the due returns.

Turnpike roads and toll-gates were established, namely, one in the district of St. Joseph, another in that of Tacarigua, and a third in that of North Naparima, with trustees appointed by the commissioners.

Bridges were to be kept in repair by joint contributions from adjoining districts. Alterations in old roads, or the formation of new ones, were decided by the council, on application of the parties desiring the same.

There were penalties attached for obstructing roads, and for smoking or carrying fire on any public or private thoroughfare of plantations and savannahs, so as thereby to endanger the adjoining properties.

Commissioners had authority to purchase lands for obtaining materials to repair roads, and to enter upon private property to obtain such materials, on payment of compensation; also, to borrow money—with the consent of the governor and council—under pledge of assessments, and to clear out beds of rivers for the transport of produce.

Although very comprehensive, this ordinance never worked well: however, it was changed only, and consequent on, the new territorial division — a new road ordinance being passed in December, 1849.

It divided the roads of the colony into royal and ward roads. The roads termed *royal*, were five in number, namely, first, the western royal road, from Port of Spain to Point Cumana, or the sea-shore, at the entrance of the ward of Careenage, and through the wards of Mucurapo, Cocorite, and Diego-Martin. Second, the eastern royal road, from Port of Spain, eastward to the sea-shore, and through the wards of Laventille, Cimaranero, Aricagua, St. Joseph, Tacarigua, Arima, Guanape, Aripo, Funere, and the high woods to Manzanilla, with a branch to Toco, and another to Mayaro. Thirdly, the San Fernando royal road, from St. Joseph, southward to San Fernando, through the wards of St. Joseph, Lower Caroni, Chaguanas, Carapichaima, Couva, Savanetta, Pointe-à-pierres, and North Naparima. Fourthly, the Naparima royal road, from San Fernando, eastward to the mission of Savannah Grande, through the wards of North Naparima and Savannah Grande, with two branches thence eastward to Mayaro, and southward to Moruga. Fifthly, the southern royal road, from San Fernando to Cedros, almost invariably skirting the sea-shore, through the Lagoon, Orapuche, La Brea, Guapa, and Trois.

The royal roads were placed under the superintendence of surveyors and inspectors appointed by the governor for that purpose, whilst the wardens of the several wards were charged with the superintendence and keeping in repair of all other public thoroughfares, not being royal roads. The expenses of the ward roads were defrayed from the ward funds, and those of the royal roads, partly from the ward funds, and partly from the general revenue.

The roads were inspected once every year, and a report thereon in writing addressed to the governor, stating the condition of such highways, bridges, and ferries—with a statement of the repairs and improvements required. These reports, as also all roads' accounts, were made up to the 31st of December, and laid before the governor and council.

This ordinance furnished rules and regulations to be observed upon petitions for opening new roads, or for altering or discontinuing any established road, with provisions against obstructions on roads, smoking, or carrying fire, &c.; but, strange to say, it did not contain any clause relating to the width of public highways.

Nota.—In May, 1851, an ordinance was passed to authorise the advance of moneys for the improvement of the royal roads of the colony.

The ordinance which at present regulates the matter was passed in August, 1854. It does not entirely repeal the ordinance of 1849, but it abolishes the distinction between royal and ward roads, and places all the public roads of the colony under the direction and management of local road-boards—subject, however, to the supervision and control of a central board.

This central board consists of the governor, for the time being, and, at the least, six other persons to be by him appointed, from time to time—of whom not less than two are members of the legislative council. There is a secretary attached to the board, with a salary of £500 per annum, paid from the funds applicable to the uses of the roads in the several road unions.

The central board sits, for the despatch of business, at the government house, at least once in each month. It has power to distribute and class the several roads of the colony into road unions, also to proportionate the debts due by the royal roads, in respect of advances made over each ward.

It has power to make rules and regulations: 1st, For the government of local boards, and for regulating their proceedings; 2nd, As to the mode in which funds available shall be distributed among the different wards forming road-unions; 3rd, As to making and keeping in good order the public roads.

Local boards are formed, in the different unions, consisting of the warden and auditors; in them are vested the direction and management of the roads of each union. They meet, at least, once in each quarter, but may be called together oftener, if necessary, by the warden. At the first meeting of the third quarter, the warden lays before the board a statement showing the extent, nature, and probable expense of keeping the roads in repair, during the ensuing year; also, estimates for any new road or bridge which may require to be established. The local boards have power to make order for laying additional rates, if necessary, and to raise moneys, by way of loan, for road purposes. In case of a member of any local road-board dissenting from the majority, or objecting to their proceedings, the question is referred, for decision, to the central board.

The frequent alterations of our board-ordinances, the apparent uncertainty which governs this most important branch of the public administration, must be a subject of surprise, and yet are easily accounted for, when matters are duly considered. Laws

may appear unexceptionable on paper, and their working comparatively easy; but, in reality, the execution may be so difficult, as to render them null and nugatory. It would seem, on reading our road-ordinances, that provision is made for everything except what is most essential, viz., qualified persons for determining, directing, and superintending the repairs of the roads. Each warden, having charge of the roads and bridges, is the grand surveyor in his ward; and yet such warden may have been, before his appointment, a lawyer, a solicitor, a merchant, &c.—in fact, anything but a person fit for the duty intrusted to him. The auditors are planters generally, or attorneys—the latter, commonly merchants; the former, good judges of the price of labour, but certainly no better qualified than the others, to determine the best mode of making or repairing roads. And yet such a fixed opinion prevails among the members of the community that each and every individual is qualified as a road-surveyor, that the dearly bought experience which has introduced improvements, by instalments, in our road-ordinances, must be further extended, ere they clearly see that competent and qualified persons should be appointed as road-surveyors, in order to direct, superintend, and control all operations connected with the making and repairing of roads, and the construction of bridges. The great obstacle—the bugbear—here seems to be the expense consequent on the appointment of competent officers—a parsimony rather inexplicable when contrasted with other lavish disbursements, and the principle that judicious expenditure is real economy. And let me remark, as connected with this subject, that the government contributes a yearly sum of £3,000 towards the maintenance of a steamer in the gulf, for the conveyance of mails, police, and prisoners, and especially for the benefit of passengers between Port-of-Spain and Naparima. The secretary of the central board is a land-surveyor, well qualified for his duty; the next step must be the appointment of paid inspectors, also qualified for their duty; and the necessary result will be better, and, I dare say, cheaper roads than are at present known to exist.

I would also suggest that the central board should consist of two representatives of the county of St. George, and of the county of Caroni, two of the county of Victoria, and one of the county of St. Patrick—whether or not members of council; and not, as at present, of gentlemen exclusively councillors, and almost ex-

clusively connected with the Naparimas. The adoption of such a plan would be more impartial, and in accordance with the representative principle, while the present arrangement tallies too well with our present partial and exclusive system.

CHAPTER VII.

PRODUCTIVE INDUSTRY. — AGRICULTURE. — EXPORTABLE ARTICLES—SUGAR, CACAO, COFFEE, ETC.—ALIMENTARY ARTICLES—LIVE-STOCK—VEGETABLES—PLANTAIN, MAIZE, RICE, MANIOC, YAMS, ETC.—FRUITS.—COMMERCE.—IMPORTS, EXPORTS.

THIS subject, from its importance, will be noted, as fully as possible, under the two following heads: 1st, agriculture, 2nd, commerce.

AGRICULTURE. — Trinidad is an exclusively agricultural country, and such, for an unlimited period, it must continue to be, inasmuch as its prosperity entirely depends on the cultivation of the soil, and the exportation of colonial produce.

Agriculture, therefore, is of vital importance to the island, and ought to be encouraged and aided at any expense. This has already been done within certain limits. The immigration ordinance, and the exemption from duty of machinery and implements of husbandry, are measures certainly calculated to benefit the agricultural interests. To these I may add the trespass ordinance, and the clause which makes the stealing of a sugar-cane an offence punishable by a heavy fine or imprisonment. But, in direct opposition to the intent of these measures, a regulation has been adopted which sanctions the dismemberment of a sugar estate by authorising the separate sale of the movable property, such as the live-stock and implements, independent of the land and fixtures. Whenever applied, this rule has proved highly injurious in its operation, and much valuable property has already been, and may still be, sacrificed. For an estate, divested of live-stock and implements, bears only a nominal value; and the purchaser of the land and fixtures will always include in his calculations, as so much cash payment, the necessary disbursements for replacing mules, carts, &c., and will make his offer accordingly.

The above favourable measures, however, were never contemplated as an encouragement to agriculture generally, but as an exclusive protection to the cane cultivation. Certainly, the sugar interest—being by far the most important—was entitled to, and ought still to receive, the largest share of protection; but it was

neither just nor politic to sacrifice all other cultures to that sole branch. The exemption from taxation of labourers' houses, and buildings *for the purpose of sugar manufacture*, was not only a partial and invidious measure, but the territorial ordinance was avowedly passed with a view to hinder the emancipated from becoming landowners, thus indirectly compelling the whole class to work for day wages on estates.

Once bent on this object, our legislators were not even arrested by the certainty of inflicting injury on the entire body of small proprietors. Neither did they perceive that, whilst endeavouring to close this door against the manumitted slaves, they were keeping, widely open, a gate through which that class so often rush upon their ruin, in order to avoid the necessity of working as hired labourers: I allude to the uncontrolled facility afforded to shop-keeping, and to handicrafts, without even the preliminary step of indented apprenticeship in the latter, or of adequate capital in the former.

An effectual barrier was thus set against the increase of small proprietors. But, instead of locating on, or returning to sugar and cacao estates, the emancipated bondsmen gave themselves up to petty traffic, and devoted their children likewise to mechanical trades. The towns and villages became crowded to excess with a swarm of idlers and swindlers; and the avenues to honest industry were obstructed by the numbers of those who, by the abandonment of field-labour, necessarily originated a ruinous competition in the various crafts to which they resorted. Hence arose, at the same time, a scarcity of labour, not only in carrying on the cultivation of our staples, but even in the production of alimentary articles.

Setting aside the discouragement created by the very heavy charges on landed property, there is, evidently, a dislike among all classes to agricultural pursuits. On the part of the emancipated, this is too natural to be blamed, however much to be regretted. In their estimation, slavery has stamped field-labour with infamy, so much so, that servile in-door occupations are deemed more *respectable* than field work. On the other hand, agricultural pursuits are disliked by the educated, both on account of the precarious nature of the crops, the difficulty of procuring continuous employment, and also because such pursuits require unremitting attention and application; in fact, I really know of no occupation more laborious than that of an overseer during the crop season.

The actual tiller of the soil is, however, more independent, and his employment less precarious, than that of a clerk, or even of a mechanic, carpenter, mason, or otherwise; for these latter are entirely dependent on chance openings in their respective callings, whereas, the former is always certain of obtaining employment and remuneration proportionate to his exertions.

"O fortunatos nimium sua si bona nôrint !"

These are causes which have hitherto acted, and still continue to act, in fomenting a prejudice against THE SOLE BRANCH of industry which we can follow here, and which is the only foundation of our property. For commerce itself entirely depends on agriculture; and the consumption of imported articles of manufacture is in direct ratio with the prosperous or adverse condition of the agriculturist.

Both on account of the above-mentioned causes, and the comparatively recent settlement of the island, agriculture, as may be expected, is in a very backward state. Not only are agricultural operations difficult in lands newly cleared and full of stumps and roots, but the classes connected with the soil are not guided by any method, and the most primitive routine is the only guide of the great majority of husbandmen. The emancipated are ignorant, because they were always employed as mere mechanical agents, and had besides no interest to induce them to become skilful. The planters themselves are unskilled, because, during the time of slavery, there was no necessity for the exercise of agricultural skill; and, since emancipation, they have been so constantly engaged in struggling for their daily bread, as to have had but little time to devote to its acquisition, either in theory or as a practical study.

What I have stated concerning culture is, *a fortiori*, applicable to manufacture. Improvement in the manufacture of sugar required expensive and complicated machinery, and means and skill to work the same, and consequently, in both respects, a large outlay of capital. On the other hand, the cacao planter could scarcely eke out a livelihood, even with the utmost exertions: he dared not improve his article, since he might not have found purchasers on the spot ready to pay a higher price for a more costly article; nor would he run the risk of shipping any quantity on advance of money, lest he should, at a future reckoning, be liable to a reim-

bursement. The fact is, encouragement was tendered, by the British public, to the production of bad cacao, as it now is, by government, to the production of bad sugar. This perhaps will be considered a paradox, but it is a sheer and patent truth; nor is it less surprising that, in this age of improvement, statesmen are found in the country of free trade and of progression, *par excellence*, who consider it their duty to discourage that very progress by over-taxing improved manufactures.

As regards cacao, a change is already visible, and the production of an inferior article is no longer encouraged. Now let us hope, in the name of common sense, of reason, and consistency, if not of fairness and justice, that the premium at present tendered to routine and retrogression, will soon be withdrawn. I know that, in this colony, and under present circumstances, sentiments differ on this subject. I have, however, too high an opinion of the good sense of the planters to admit, for one moment, that they regard improvement in the manufacture of sugar as otherwise than a desideratum. The Dutch, French, and Spanish colonists, the planters of Louisiana, and Brazil, with even a few British planters, have already adopted, and are daily introducing improved methods, and this, to their manifest advantage—a guarantee that improvements in all branches of manufacture have hitherto proved really beneficial to commerce in general, and to private individuals in particular. It would, therefore, be a most extraordinary exception, if progress in the manufacture of sugar should prove detrimental to the fortunes of British colonists.

I do not wish, however, to convey the impression that no advancement whatever has been made in this or other British colonies. On the contrary, animals of draft or burden are now well cared for, properly fed and penned; the management of estates is also conducted on more economical principles, little remaining to be effected in that respect. The once cherished system of extensive supplying or replacing decayed stools by suckers from some neighbouring cane-piece, is being relinquished for the more immediately expensive, but, at the same time, the more judicious and ultimately profitable method of entire replanting; more attention is also paid to the preparation and application of stable manure, and to proper distances in original planting. But manual rather than implemental labour, is still the rule, and the hoe is still retained where the plough might be advantageously used—many

planters asserting that the use of the plough has proved detrimental on various occasions, in as much as canes planted in ploughed lands do not *ratoon* well, and do not last long, whence the necessity of more frequent replanting: it is even contended that the soil becomes impoverished by the operation of the plough. This opinion is much too general not to have some foundation; but, the fact itself is too contrary to general observation, not to be susceptible of explanation. I have made inquiries on the subject, and have been led to conclude that the following is the true position of the case: Canes planted in land *ploughed*, but *not properly manured*, do neither ratoon well nor last long; but there is no detriment, wherever the land has been judiciously manured. By dividing the soil, and rendering it more permeable, the operation of ploughing has for effect, to bring the saline aliment within reach of the roots, and, of course, a larger proportion of it is taken up by the cane in ploughed, than in hoed lands; hence the necessity for manuring. I may as well remark here that, whenever a field requires *dressing*, the best plan evidently is to *spread the manure, and plough it in* before planting. The use of the plough has been confined to a few estates, not only on account of the above mentioned objections, but in several districts, in consequence of the undulation of the land, and the fertility of the soil which yields good crops almost without labour: "*per se dat tellus.*"

In certain localities the season for ploughing is limited to a very short period, namely, to the commencement of the dry season, before the ground has become too hard, or at the immediate setting in of the wet season, when it has been softened by the first showers. But, in highly undulating districts, the upper layer runs the risk of exposure, in the latter case, to the washings of the heavy after-rains, and may thus be carried away from the slope to the bottoms or hollows.

In such lands, however, a superficial ploughing, followed by the grubber, might be of good service without being open to objection.

Neither fodder nor provisions—with rare exceptions—are cultivated on sugar estates. I know that scarcity of labour is alleged as an excuse—a very valid one certainly—but few admit the soundness of the principle itself; and, by many, it is considered as good policy, that the labourer should *purchase* all alimentary articles, because he will then be always compelled to work for money-wages.

The above observations were applicable, in part at least, to cacao estates, at one time—and that not of a far-back date. These plantations were negligently weeded with the cutlass, twice a year, merely to facilitate the gathering of the crop; but the trees being neither pruned nor cleared of parasites, mosses, or lichens, yielded but a few coarse and inferior pods. More care, however, begins to be paid to the health of the plants, and several proprietors add to this culture that of "ground provisions." This latter, a collateral and most essential branch of our agricultural economy, is also receiving a greater share of well-merited attention; and in many localities there is abundant produce of plantains, corn, rice, and edible roots. I have often thought that the horse-hoe might be employed in the *cacao walks* with great advantage. Generally speaking, the weeds to be found on cacao plantations are soft, and not very deep-rooted; whilst the mould being deep, there would be very little obstruction to the working of that implement. The work effected by the horse-hoe would certainly be better, and also cheaper, I expect, than that performed with the cutlass; for, with the latter, the grass and weeds are only cut at from one to two inches above the ground—the surface not being even scratched; whereas, with the former, there would be a thorough deep weeding. But it evidently could not be employed in old-established cacao estates where the roots of the "bois-immortel," and those of the cacao trees themselves, form an inextricable net-work of impediment to a surface action. Such practice should be resorted to primarily, on young plantations, and then might be continued as they advanced in growth; this I throw out as a suggestion to any enterprising cacao planter. The common hand-hoe, however, ought to be used *immediately around the base* of each plant, which is also, as far as I am informed, the practice on the Spanish main, where the culture of the cacao is better understood than in any other country.

The time has arrived which, in my opinion, imperatively demands a relief to landed property from some of its burdens, an encouragement to all branches of agriculture, and, as far as possible, the formation of an industrious peasantry: this can be done within certain limits, by the revision of some of our actual laws, and by the introduction of new measures specially adapted to the present crisis of affairs.

If much remains to be achieved in those sections only of the

agricultural field which have already been surveyed, what an extent of it still remains unexplored! The science of agricultural husbandry is no longer that confused congeries of incoherent precepts which, for a long time, formed its fundamental structure. Supported by chemistry and meteorology, it tends, by degrees, to assume among the other sciences the high position to which it is eminently entitled; and its progress is marked by daily improvements. But the precepts of that science vary in their application with the climate, the soil, and the different properties of the plants themselves; so that methods of culture, though based on uniform principles, are but the digested result of a series of individual observations, made under the same climate, and in various localities—not only respecting drainage, tillage, planting, &c., but also regarding the economical management of properties. Hence the utility of agricultural societies, or at least of occasional agricultural meetings, at which any member, possessing aught of interest to communicate, may contribute his quota of information to the general stock. But, unfortunately, the proceedings of our planters are governed by egotistical individualism. Instead of widening the circle of his observations, each individual seems satisfied with contracting it within the bounds of the estate he manages. Further still, many conceal from their nearest neighbour their success, as well as their failures; for, they are under the impression that their knowledge is more enlarged, their experience sounder, and their system superior: they even refrain from friendly intercourse, lest they should be taken by surprise, and thereby disclose some important secret of which each conceives himself the sole possessor. But let those who imagine they have little to learn from others, or believe themselves in possession of secrets, be at once undeceived; for this is the sure symptom of an ignorance blind to its own errors and defects, or of a vanity which dreads being eclipsed by contact with a superior intelligence. It is an undoubted fact that the most skilful, and best informed, *can*, and *do*, derive profit from the experience of others, even of the most ignorant. For, in agriculture, the field of observation is unlimited, and what had escaped the attention of the most superior mind, may have been remarked by one vastly inferior in intellect; or, that which was but superficially observed by one individual, may have been profoundly examined by another.

I am aware that the formation of agricultural societies is more difficult in Trinidad than in some of the old colonies, on account of the scattered position of our sugar estates. But it might be attempted in the Naparimas, with the accession of Savannah Grande, Oropouche, Pointe-a-Pierre, and Couva. I fear, however, that the main obstacle arises from the position of the immense majority of sugar-planters; they are generally subordinate, and by no means free agents—being dependent on the caprice of some conceited attorney, or the exigencies of an absentee proprietor. This is the more to be regretted, in that most of the managers of estates are native or other Creoles of respectable families, and *standing high in public estimation*, not only for professional qualifications, but also for sobriety, honesty, and general information.

Alimentary Articles.—Cerealia—Indian corn or maize (*Zea mais*). Inferior to wheat only, in point of nutritive qualities, the Indian corn is one of the most nourishing grains, and superior to rice, rye, barley, or potatoes: the proportion of starch is 67·55 per cent.; of gluten and other azotised substances, 12·50; of fatty matter, 8·80—whereas that of bran is only 5·90.—(Payen.) It has been ascertained that individuals subsisting on this grain are, in general, stronger and more robust than those using either rice, barley, or potatoes. Indian corn is also a very wholesome aliment, and forms the principal article of food of nearly one half of the southern population of Europe, of a very large proportion of that of Asia and Africa, of nearly the whole population of South America, and of a great part of North America. Maize grows well in Trinidad, and thrives remarkably in good soils: the average yielding, per acre, is from twelve to fifteen barrels in ears; its price varies from 80 cents to 2 dollars per barrel, and the cost of raising the crop per acre from the seed is about 8 dollars —under our present imperfect system of culture. Corn is raised either in high or low lands; when in the former, it is planted at the commencement of the wet season, and in the latter part of May; in low lands, in January or February—so that two crops may be commanded every year. It is planted in holes of slight depth, being made with the point of a cutlass or a sharp-pointed stake, and at a distance of four feet apart, from three to five grains being cast into each hole. When at about three weeks growth, it is well hoed, and weeded once more, when two months

old: it comes to maturity within four or four and a half months. During the wet season the plant is bent, so that the ripe ear hangs downwards, and thus the filtration of rain-water within the husk is obviated. The maize of Trinidad is different from that cultivated in the United States and Europe; it grows here from ten to twelve feet high, the grain is smaller, less flat, and of a deep yellow hue. As an article of food, it is preferred both by man and animals, the latter seeming to fatten much more solidly and readily on it. With all these advantages, maize is but sparingly cultivated in the island, and both the grain and meal are imported annually from the United States of America and Venezuela, to the amount of 19,623 bushels, and 8,325 barrels, value £9,700 sterling. The price of United States' corn varies from 1 dollar 80 cents to 3 dollars per bag of two bushels, and that of meal from 4 dollars to 6 dollars per barrel.

In the present position of the colony, and with a very scanty agricultural population, it cannot be expected that corn should be cultivated for exportation; but it certainly might and ought to be produced in a sufficient quantity for home consumption.

Rice (*Oryza sativa*).—This grain grows very well in Trinidad, and yields from six to seven barrels per acre. The culture of rice, as conducted here, does not require any great amount of labour or care; whereas, the land should be well and thoroughly prepared before the seed is committed to the soil. Rice is either sown or planted: when sown, it yields a more abundant crop, but its reaping is more tedious, as each stalk is generally cut separately and made up into small sheaves. When planted, it does not yield so largely, but the stalks of ears forming each *stool* may be reaped at one grasp. It is planted at intervals of six inches, from four to five grains being put into each hole: when sown, the field is hoed superficially, so as to cover the seeds. Rice is always sown or planted at the beginning of the wet season, and does not require irrigation. It is grown either in high or low lands. In fact, two very distinct varieties of rice are cultivated here. The one (*nelou kar*, Ind.) is of a reddish colour, and small in size; it seems to be hardier than the other sort, but is not so prolific, and grows in the worst soil, provided the latter has been thoroughly burned. The other species (*nelou samba*) is more vigorous, but requires a better soil, and thrives in low lands, where it shoots up, at times, to the

height of from five to six feet; its grain is as large and white as that of the Carolinas.

Rice comes to maturity within three months and a-half; heavy showers prostrate it to the ground, and, in that state, if not cut within a few days, it germinates.

The inhabitants cultivate this grain generally for their own use; they reap and preserve it in the straw till required for use, and then bruise it in a wooden mortar to separate the grain from the husk—a very tedious, imperfect, and consequently, a very expensive process.

The proportion of starch in prepared rice is 89·15 per cent; of gluten and other nitrogenous substances, 7·05; of fatty matter, 0·80; bran, only 1·10—(Payen)—and yet it forms the basis of the alimentary diet of the eastern populations. We import, annually, from the United States and the East Indies, about three million pounds of rice—valued at £14,500 sterling. The importation from the latter country has greatly and naturally increased with the immigration of labourers from the same parts. Rice might be produced here in sufficient quantity for the island consumption without endangering the public health; and large tracts of land which now lie waste either from their comparative infertility, or from the difficulty and consequent expense of draining the soil, might be thus rendered highly productive.

Guinea Corn (*Andropogon sorghum* and *Andropogon saccharatus*). Two species are cultivated here to a very slight extent, and that not as an aliment, but rather as fodder; they are very prolific, and might be raised as a supply of grain for poultry. Indian corn, however, will always be preferred.

Musaceæ Plantain (*Musa paradisiaca*). Like all cultivated plants, the plantain has many varieties: there exist, however, three distinct species. The *Horn* plantain (*Musa paradisiaca*)—from the resemblance the fruit bears to the horn of a young bull; the *French* and the *Dominica* plantain (*Musa regia*); Bananas (*Musa sapientum*). The *Horn* plantain is more extensively cultivated than the other species, being hardier and not requiring frequent replanting; but though the fruit is much larger, whence it also obtains the *soubriquet* of Horse plantain, its bunch is not so well supplied, having ordinarily but twenty-five, and often fewer, plantains or fingers to the bunch; as an edible, it is also much coarser than the other species. *French* or *Maid* plantain: the body of this

plant is of a dark violet colour, as also the nerves of the leaves; the fruit is smaller than that of the former, but the bunch is supplied with a much greater number of plantain-fingers, averaging about sixty and eighty, but sometimes from one hundred to one hundred and thirty. This species is regarded as more delicate than the others, particularly when ripe. *Dominica* plantain: this is a variety of the latter; though the body is exactly like that of the *Horn* plantain, the bunch, however, resembles that of the *French;* but the fruit is somewhat shorter and plumper. The plantain is extensively used in Trinidad, and on the neighbouring continent: it is a cheap, wholesome, and nutritious diet, and perhaps the most productive of all alimentary plants—in fact, field labourers contend that it is better suited to the support of their strength, in manual labour, than bread—at any rate, it forms the *staff of life* to the generality of Creoles. Its nutritive value has not yet been ascertained, but Boussingault considers it superior to that of potatoes; it is also superior, in general opinion, to that of cassava and rice: it may rank as a farinaceous aliment, containing albumen and gum. The plantain is used either in the ripe or green state: in the former it is eaten either as a fruit, or prepared in various ways with sugar and spices, as confectionary. When green, it is either roasted, dressed with meat, or simply boiled, and afterwards crushed in a mortar so as to form a thick paste, which is used instead of bread. Plantain may be regarded as the most productive of all alimentary plants; the yielding per acre is, according to Humboldt, 155,000 pounds; and 125,000 pounds, according to Boussingault. The plantain requires a good deep soil and a sheltered position, being easily prostrated by strong winds. It is propagated by sprouts (improperly called *slips*) which are planted at ten feet apart. From five to seven of these young shoots or suckers spring out of and around the parent stem. The fruit, or rather the bunch of fruits, makes its appearance between eight, nine, and twelve months. The young shoots then give their fruit in succession, for two, three, or even many years, according to the climate, fertility of the soil, and the care bestowed on them. A plaintain *walk* requires only occasional weeding and pruning. We import from Venezuela about 7,000,000 plantains annually—value, 53,000 dollars.

Bread-fruit (*Artocarpus incisa*)—*Artocarpaceæ*.—The bread-fruit, so invaluable to the inhabitants of the Polynesian Islands,

is perhaps too much neglected in the western archipelago; for, although little nourishing, it is a wholesome aliment. A few trees only are met with in the island, and, yet, it would form an invaluable resource for the poor, or, at least it might serve to feed or fatten swine. The bread-fruit tree thrives in good or even poor soils, and requires very little or no attention. It is very prolific—each tree bearing, every season, from seventy-five to one hundred and sixty pods, and each pod affording sufficient for a meal for two persons. They sell at about two cents each. It is propagated by cuttings from the roots; the root is severed from the tree, and raised from under the ground; after about three weeks, buds begin to appear on the part thus raised; it is then taken up, and separately planted.

Tubercles (*Dioscoreaceæ*)—Yam (*Dioscorea*).—This is the most important of colonial tubercles. It is farinaceous and wholesome, containing, according to Payen, twenty-seven per cent. of nitrogenous principles. It may be used as a substitute for bread, either boiled or pounded after boiling, or dressed with meat: another advantage is that it keeps for several months, provided it be laid up in some dry place. There are two species of Yams—*Dioscorea*, *Triphylla*, and *Sativa*, the hard and the soft leaved. Amongst the former, the *Portuguese* and *Guinea* Yams are the best varieties, and most farinaceous. The Guinea Yam gives the best and quickest return, but it germinates early in March. The Portuguese sort comes in later and preserves better, but does not give so good a return. Both varieties also resist the attacks of the parasol-ants much better than any other kinds.

The different varieties of *water* yams, or the soft-leaved species, are more prolific but not so delicate: they come in later, and keep until the middle or end of July. With proper care and attention yams grow well in any land, but they thrive best in good soils, particularly in loam and on hills. The soil must be well prepared for the reception of plants; generally, large holes or trenches from eighteen to twenty-four inches deep and two feet in diameter are dug, and filled with decaying vegetable matter, or *trash*, then covered with earth and the plant placed below in the hole, or trench. Some people are content with raising mounds about two feet high, in which they lay the plants; they are commonly set at four feet apart with a prop stuck in the central interval of every four plants, to serve as a support to the

vine. Yams are generally laid in when *they ask to be planted*, to use a local expression, that is, when they send forth shoots, which they infallibly do, however dry may be the place where they have been kept. The tubercles may be dug up in December, or after nine months; they weigh from twelve to twenty-five pounds; and an acre of land, well prepared and properly attended to, may yield from 7,000 to 9,000 pounds. The outlay may be calculated at from sixty to seventy dollars per acre. Yams commonly sell at three dollars per 100 pounds.

Cush-cush (*Dioscorea alata*).—The cush-cush is very different from the yam, and is perhaps the most delicate of all known tubercles, but, with the drawback of not keeping beyond a few days, it cannot be expected that it will ever be cultivated to any great extent. The tubercles weigh from two to four pounds, and a single plant may give from forty to sixty pounds. The cush-cush requires a good light soil, and the same care as the yam; it grows from tubercles which must be planted immediately after being dug. The crop is from February to May.

Euphorbiaceæ. Manioc or Cassava root (*Jatropha manihot*). —This is divided into *bitter* and *sweet* cassava; the latter of which is an edible root, very farinaceous, and may be used either boiled or roasted. The *bitter* cassava is poisonous, and must undergo certain processes before it can serve as food; there are three varieties of the *bitter* kind. From the roots are prepared flat cakes called cassava bread, and also a coarse meal known as *farine*, or manioc meal; both of these are extensively used as a substitute for bread, especially the farine which keeps a long time when properly stored. From the same part of the plant is also prepared a fine starch, which is in great request among washer-women.

To be made into these various preparations the roots are first scraped clean, then washed, and grated; after this, the pulp is pressed so as to extract nearly all the juice it may contain. When the pulp is to be made into cakes, it is laid on an iron plate over a fire, and baked to the required point; when to be converted into meal, it is placed in a sort of a large pan, or on a similar plate with a low rim, and stirred backwards and forwards, as well to favour the regular diffusion of heat throughout the mass, as to prevent its burning or uniting in lumps. The juice is allowed to subside for two or three days, and then drawn off

when a fine starch is found deposited in the vessel. From this juice is also prepared a pungent sweetish sauce called *cassaripe*, which is much esteemed by the natives, and also highly relished by Europeans. The *bitter* cassava is highly poisonous, and no culinary process will deprive the pulp of its deleterious properties, unless the juice be previously expressed. All kinds of animals as well as man are poisoned by eating the roots, but particularly by drinking the juice of the bitter cassava. Agoutis, however, lapos, and even pigs, may and do feed on the roots fresh in the soil, and when covered with earth, without apparent injury. Pigeons have been seen to drop dead, without even tasting it, from merely perching on the margin of the vessel containing the juice. The active principle, or poisonous agent, of the *bitter* cassava is hydrocyanic acid, which is distinctly perceptible from its strong smell. The best counterpoison, perhaps, is salt water. *Sweet* cassava comes to maturity within six or nine months; *bitter* cassava within ten or fourteen months; the latter may also be allowed to stand over for two years and above, when planted in a well drained soil. The cassava may be grown in soils of moderate fertility; it however thrives best in clay, loam, and an exposed situation, as on the slope of hills. It is propagated by cuttings, which must be planted in the driest season—in March, for instance. The soil having been well prepared, holes are dug about six inches deep and the cuttings thrust in. The yield in good soil is from fifteen to twenty barrels an acre. Cassava does not keep more than two or three days, and must be manufactured into cakes and meal as soon as possible. A large quantity of the starch is imported from the Main, particularly from Maturin.

Convolvulaceæ—Sweet potato (*Batatas edulis*, *Ipomea batatas*).—This is a very delicate and wholesome tubercle, which is very extensively cultivated in some of the old islands; but in Trinidad, it is raised on a very small scale, although it thrives well in the light loams of the colony. Barbadoes, St. Kitts, Grenada, and St. Vincent have the privilege of supplying the market of Trinidad with yams and sweet potatoes to the amount of nearly £1,200 sterling yearly.

Araceæ—Tanias (*Caladium esculentum* and *Colocasia antiquorum*).—Several species of *caladium* are cultivated in Trinidad; some of them as the *plantain tania* (so called from its size and form), grow very large, and are an excellent food. The tania

may be ranked amongst farinaceous substances, and is very wholesome: the part used is the rhizoma, or underground stem, which is generally boiled.

Vegetables.—Most of the vegetables of temperate climates may be grown in Trinidad, from December to May or June; but during the rainy months, they suffer from excessive humidity, and are liable to rot; native vegetables, on the contrary, thrive well during the wet season. Good carrots and turnips are grown, as also excellent cabbages, though small. Three different beans, being species of *Phaseolus*, are cultivated here—the French, the red or dwarf, and the black bean; the latter is very prolific, but on account of the dark colour of the husk, is commonly prepared as French beans, or as salad; it is particularly abundant during the wet season. Together with these may be classed several species of peas (*Dolichos*)—of which three different kinds are much used; they are known, by the French, under the respective names of *pois-souche* or the *stump* pea, the black-eyed, and *pois chiches*, all of which, with the pigeon or angola pea, *Cytisus cajanus*, are commonly sold in our markets. It is to be regretted that more attention is not paid to the cultivation of the latter pea.

The Cajan is a shrub which may be planted on the borders of cane-fields, or of any other cultivation, so as to have the benefit of the tillage necessary for the growth of more important plants. It is a very good vegetable when dressed soon after being gathered. The pigeon pea is also excellent for restoring the fertility of fallow lands.

The Ochro (*Hibiscus esculentus*) is abundant; tomatas (*Solanum lycopersicum*) and melongens (*Solanum melongena*) are plentiful, and require but little attention. Pumpkins and squashes (*Cucurbita maxima* and *melopepo*), as also the christophine or chouchow (*Sechium edule*) require no other trouble than that of planting. Jerusalem artichokes (*Helianthus tuberosus*), cucumbers (*Cucumis vulgaris*), and radishes (*Raphanus sativa*) are likewise brought to market, together with the following culinary herbs:—lettuce, parsley, thyme, and water-cresses; onions and shallots (*Allium ascalonicum*), spinage (*Spinacia oleracea*), goment (*Solanum morella*), and the foliage of tanias.

Animal Food.—The animal food of the population consists of salt provisions and fresh meat, including game of all kinds.

Salt Provisions.—We import from the British Colonies of North America and the United States, besides cod or salt fish (local term), mackarel, herrings, and salmon, to the amount of about one million two hundred thousand pounds—value £14,700 sterling. Salt fish may be said to be the staple of the animal diet of the population; the richest as well as the poorest inhabitant of Trinidad must have his salt fish at breakfast, and many use it at dinner also. So constant and extensive is its use in the rural districts, that it has long borne the flattering designation of "Planter's Ham."

Salt beef, pork, and hams are imported from the British Isles and the United States; corned fish, salted hog, and *tasajo* or jerked beef, from Venezuela; from England, Martinique, and St. Thomas, we get our supplies of butter, oil, and preserves; the total amount of annual importation being £15,200 sterling.

Live Stock and fresh meat.—Except poultry, the island rears almost no animal food—nearly every ox slaughtered in the colony being imported from Venezuela. The beef is not of the best quality, as the animals, on arrival, are generally wild and lean; but it is very cheap, selling at from 2½ to 10 cents—the average being about 7½ cents—the pound. About 6,200 head of cattle are imported annually—weighing on an average 400 pounds each, and for which the medium cost is 8 dollars per head, or the yearly sum of £10,500 sterling. The cattle, however, from the mainland, may be considered as an exchange for goods, most of them being imported as remittances. Veal is very scarce, and sells at from 10 to 15 cents per pound. Goats and swine are imported chiefly from Margarita, sheep from Cariacou (one of the Grenadines), and some of the old islands. Mutton is scarce, and of average quality. Except in a few privileged localities, such as Icacos, Mayaro, and the Cocal, sheep do not thrive in Trinidad; swine succeed very well indeed, and can be easily fattened; but the people seem to find the rearing too troublesome. Kid, pork, and mutton sell at 10, 15, and 30 cents per pound, respectively.

Poultry.—Although poultry is bred abundantly, particularly on cacao, coffee, and provision estates, yet a large quantity is imported from Margarita, and even from Grenada. Chickens are subject to *yaws* (local term), and a very severe catarrh, or *chack*, both of which destroy a great number at certain seasons;

it is almost impossible to preserve young turkeys from the attacks of the former distemper. Ducks are much less liable to disease, but the breed is confined mainly to the musk species (*Anas moschata*), though a few of the European species are here and there to be met with. The opossum, the tiger-cat, and a large species of falcon or hawk are great enemies to grown fowls, and a large lizard, the *mato* (local), to young ones; alligators, also, sometimes make havoc among ducks. However, except turkeys, the island produces poultry in nearly sufficient quantity for its own consumption.

Pigeons are scarce, and are seldom sold in the markets. The price for a pair is 50 cents; for a fowl, from 50 to 70; for a capon, from 80 cents to 1 dollar; ducks (a pair), 1 dollar to 1 dollar 50 cents; turkeys (a pair), from 2 dollars 50 cents to 3 dollars 50 cents; the latter are mostly from the main, and are sold on board of the launches from 1 dollar 60 cents to 2 dollars; Guinea birds, from 1 dollar 50 cents to 2 dollars per pair.

Fish.—The market is tolerably well supplied with the following, viz.,—snappers, king-fish, groupers, mullets, baracoutas, and lébranches. A species of carangue, known here by the name of anchovy, is very abundant from the end of June to the middle of July. During the dry weather, the cascaradura (a pond fish) is also sold in the markets; it is much esteemed by the natives.

There is, in addition to the above, a good supply of turtle, principally from the Main; morocoys, or land tortoises, are also sold during Lent, and at other seasons.

Crustacea and *Mollusca*.—The following are in great and general use:—Sea and land crabs, cray-fish, shrimps, lobsters, *palourdes*, or muscles, cockles, and *chipchips;* oysters, although good and plentiful, are seldom offered for sale in the market.

Milk is not so plentiful as it ought to be; but it may be had, of good quality, for ten cents a quart bottle.

Fruits.—In Trinidad are found all those fruits which are the produce of tropical climates:—bananas (*Musa sapientum*), five or six varieties; mangoes (*Mangifera indica*), in abundance; excellent oranges (*Citrus aurantium*), five or six varieties; Malacca apples (*Eugenia*); pine apples (*Ananassa sativa*); mammee apples (*Mammea Americana*); four or five varieties of sapodillas (*Achras*

sapodilla); *Chili* and *Governor's* plums (*Spondias* and *Flacourtia*); granadillas and water lemons (*Passiflora Alata*, *P. laurifolia*); sugar apple, soursops, custard apples (*Anona squamosa*, *A. muricata*, *A. reticulata*); three varieties of caimit (*Chrysophyllum Caimito*); musk melons, scarce, and water-melons, abundant (*Cucumis melo*, *Cucurbita citrullus*); pomegranates (*Punica granatum*); papaws (*Carica Papaya*); cashews (*Anacardium occidentale*); *Pomme-ythere* (local), or cytherine apple (*Spondias cythera*); and several other sorts of tropical fruits.

Avogado Pear (*Persea gratissima*).—The *avogado* or *aguacate* pear—the latter being preferable as the original Carib designation—is extensively used; hardly, however, as a fruit, but rather as a sort of *vegetable marrow*, which term has not inaptly been applied to it. From it may also be extracted an oily substance, which might be brought to serve for various purposes. The flesh of the aquacate pear, when ripe, is remarkably soft, and forms an excellent salad. The process of boiling, however, seems to develop in it a bitter principle, which renders the oil prepared by ebullition unfit for culinary purposes. It is presumable, however, that this oil, when cold drawn, might be used at table as a condiment. Such of it as has been obtained is limpid, of a greenish colour, and has answered very well for burning in lamps. The pulp contains from 15 to 16 per cent. of oil; but only 11 per cent. has yet been extracted. Although the aguacate tree thrives best in good land, yet it grows in almost any soil; it requires very little care, and yields well. It begins to bear at between five and six years, and continues in full bearing for about twenty or thirty years. The fruit weighs from one pound to a pound and a half. I have seen some weighing as much as three pounds two ounces.

Grapes and European figs are very scantily cultivated; probably on account of the parasol-ants, which are particularly fond of the vine, and of an insect which attacks the fig-tree. Limes and lemons (*Citrus vulgaris*, *Citrus limonum*) are very common; the balata fruit (*Achras balata*) is also sold in town and country.

Exportable Articles.—The principal and almost sole articles of export are sugar, molasses, and rum; cacao, coffee, and coco-nut oil. The cotton, hides, &c., exported from Trinidad, come from the neighbouring cantons of Guiria and Maturin, though some of the former is cultivated in the island.

Sugar is, by far, the most important article of exportation; it

is, in general, of inferior quality. The quantity exported in the year 1853, 33,835 hhds., was equal to about 54,136,000 lbs. Trinidad possesses an immense quantity of sugar lands of first-rate quality; there are now under cultivation 29,000 acres. The average yield, per acre, is 2,600 lbs.; the maximum 5,000 lbs., and the minimum 1,500 lbs. In good land, canes *ratoon* (*i. e.*, are reproduced from the original stools or roots without replanting) for seven and eight years; in superior virgin land, newly cleared, for fifteen years and upwards. Canes are cut at a growth of between twelve and fifteen months. A system of culture had obtained in Trinidad, during the time of slavery, the apparent advantages of which were found to be far more than counterbalanced by its disadvantages; it was known as the *stand-over* system. Canes, though ripe, were allowed to stand over for the next crop, at which time they would be from twenty to twenty-four months old. This system was mainly followed in the Naparimas; it is now, however, abandoned by all judicious planters. The plough is used only on a few estates, and the hoe is still the favourite instrument. This may be attributed to the nature and disposition of our soil, it being generally a clay loam, in undulating districts; and also to the very heavy showers which prevail during the planting season, viz., from June to October, and which work down the loosened soil from the slopes and heights above. The crop begins as soon as the weather permits—say, in the beginning of January—and continues till June, when the rainy season sets in; advantage is also taken of good weather towards the end of the year, in the *fall* as it is called, viz., November and December. There are but few water-mills in Trinidad, and no wind-mills; steam-engines and cattle-mills being preferred. The average crop of each estate, with an engine, may be estimated at 250 hhds.; some, however, manufacture as many as 600 hhds., weighing each 1,600 lbs. net—a total of 960,000 lbs. A few cattle-mills, of a superior power, can turn out as many as 300 hhds. in a crop season. Some sugar estates have been abandoned since the emancipation; a few have been newly formed; but, in general, the cultivation has been much extended on each estate, thus accounting for the increased produce since 1850. The sugar of the island is put up in hogsheads, tierces, and barrels; none in boxes or bags.

The quantity of molasses shipped in 1853, amounted to 13,362 puncheons, or 1,400,000 gallons. The Trinidad rum has been

much improved lately, owing to the introduction of the mos approved stills. The quantity exported in 1854, was 320,000 gallons, which, however, might be much increased.

Cacao* (*Theobroma cacao*) is the article which ranks next in importance to sugar. The quantity exported in 1853, was 4,842,075 pounds.

There are two distinct species or varieties of cacao; one is known by the name *Creole cacao* (*Cacao creolio*), and the other by that of *Foreign cacao* (*Cacao forastero*). The former produces the best specimens, and is extensively cultivated in the province of Caracas. It is somewhat more delicate than the other, requires the best soil, and does not yield so abundantly; the pod is, in shape, more elongated, the outer covering thinner, and the beans are plumper and larger. The cacao forastero is hardier, more robust, and yields more abundantly; the fruit is rounder, the beans smaller and flattened; they contain also a larger proportion of fat, and have an astringent taste, whilst that of the creolio is soft.

The quantity of land under cultivation for this plant is 7,000 acres. Cacao thrives only in rich deep light and *moist*, but not *retentive* soils, such as valleys and the banks of rivers; heat and shade are also necessary to its growth. The mean yearly temperature must be 78° or 80°, and trees must be planted at intervals in the cacao walk, to afford protection against the sun and the strong breezes. Cacao plantations prosper only in virgin lands, and cannot be made to succeed any other cultivations.

After the land has been cleared, it is picketted off at distances of twelve or fifteen feet; the beans are then planted at twelve inches apart and covered with plantain or balisier leaves, which are removed as soon as the seed has germinated. If the two plants succeed, one is removed either altogether, or for supplying a failure elsewhere—this being done at a growth of between twelve and eighteen months. The planting season is in July: a nursery is at the same time formed for the future supply of those plants which may not have succeeded. Previous to the laying out of the cacao-walk, plantation-shoots are set throughout, which afford shade to the delicate young plants; as also the *bois immortel*, which is destined to protect the more mature plants in future years. There are two species of bois immortel, or *Madre de*

* "Cacao, not Cocoa," as remarked by Professor Lindley, "ought to be the name for the *Theobroma*." See the note at the end of the chapter.

cacao—the *anauco* (*Erythrina coxinea*), and the *bucare* (*Erythrina umbrosa*). The erythrina umbrosa is hardier, and has a denser foliage than the coxinea, but the latter is preferred in Trinidad. However, the umbrosa is decidedly preferable wherever the soil is not of the best quality. The cacao-tree grows from twenty to forty feet high; it begins to bear a few straggling fruits between three and four years, is in full bearing at twelve, and continues to give good returns for a duration of forty years, after which period it declines. Though of vigorous growth, the cacao plant is very delicate, and has, besides, many enemies. The north winds, as also the showers that irregularly fall during the dry season, are injurious to the plant itself, but chiefly to the blossoms and young fruits, which they blight. The healthy growth of the young tree is arrested by the parasol-ants devouring the leaves, or the deer nipping off the terminal bud. It has also an enemy in an insect of the genus *longicornis*, which lays its larva under the bark, where it feeds on the tender parts of the plant. A species of woodpecker (*dendrocolaptes*), as well as squirrels and surmulots, destroy a large number of pods annually in order to feed either upon the sweet acidulated pulp which lines the beans, or upon the beans themselves. The cacao-tree is also very liable to become covered with parasites, mosses, and lichens.

The average yield per acre throughout the island is 550 pounds, or two pounds per tree, the maximum being as much as 1,080 pounds per acre, or four and a half pounds per tree. There are two regular crops or *pickings* in the year, viz., in June and December; there may, however, be said to be two partial pickings in the intervals. The pods come to maturity within three months and a half, rain hastening the ripening. They are detached from the tree with a knife or blade of a peculiar form, attached to the end of a long rod, so as to reach the highest branches.

They are afterwards gathered into heaps, and each pod is opened with a strong knife or short cutlass. The beans are then taken out, put into baskets, and carried to the curing-house, there to be cured and dried. Different methods may be adopted for curing and drying the cacao for the market. According to one method, the beans are *immediately* spread out in large flat boxes or *trays* exposed to the action of the sun, and put under shelter at night, to be again spread out the next day; this is repeated till

they are sufficiently dried to be packed into bags. This is cacao prepared for the *British* markets; it is of a red colour, clean, flinty, heavy, and bitter, in fact, the worst sample from which to prepare chocolate. Unfortunately this sort of cacao has been, and still is, too much encouraged in the same markets. A different method is followed when the cacao is to be prepared for the *French* or *Spanish* markets; it is then put in heaps, well covered with leaves, and allowed to *sweat* or ferment for five, six, or eight days, according as damp or dry weather may prevail: some persons contend that it is better to allow it to ferment on the spot where plucked and opened.

Sometimes it is spread in the sun for a few hours before being placed in heaps; and this seems to accelerate fermentation; it is afterwards spread in shallow boxes, or on a drying-floor prepared for the purpose. This latter plan is preferred on the main, and probably with reason; but in no place is the cacao buried as a preparative to drying, as reported in some works on the subject. Cacao which has fermented is of a dark colour, light in weight, contains less of the oily substance, and has no astringency. The bean is rounded in form, and of a cinnamon colour within; this is not only the best, but the *only* cacao suited to the preparation of chocolate. Trinidad cacao is now worth about five dollars in the colony, but it fetches about fourteen dollars in the French market. During the revolutionary war of the Spanish colonies, the best Trinidad cacao sold for twenty-eight dollars per *fanega* of 110 pounds, and continued to sell at a high price—from fourteen to sixteen dollars—for several years; it then declined, by degrees, till, in 1827, it sold as low as three dollars—planters not taking the trouble of gathering their crops, the expenses attendant thereon being greater than the price offered. This falling off in the price of Trinidad cacao may be attributed to various causes, general or local. The European, and the British markets especially, became glutted with importations from Brazil and Guayaquil; Spain, then at peace with her old colonies, began to import cacao from Venezuela and Nueva Granada, so that the article became a mere drug, except the best, or Caracas cacao, which, even now, sells as high as eighteen and twenty-one dollars. Unscrupulous speculators in the island also resorted to most nefarious practices to defraud purchasers, not only by the admixture of damaged and inferior with good cacao, but by the addition of weighty substances.

Remunerative prices being paid by them for the heaviest sort, the production of a bad article was thereby encouraged, the Trinidad cacao gradually lost its reputation, and the producers were ruined.

Some planters are now trying to raise it in the estimation of French traders. May God help them! The quality of the Trinidad cacao may certainly be greatly improved by proper care and attention being paid both to the choice of plant-seeds, and also to its proper curing; but, with all possible improvements, it seems a mistaken idea to expect that, in the present state of affairs, "Trinidad might supply cacao equal to anything produced in the best markets of the Magdalena, Soconusco, and of other places on the Spanish Main," as assumed by Dr. Lindley in his lecture "On substances used as food, illustrated by the Great Exhibition."

"Cocoa, or cacao as we should call it," says the learned lecturer, "is an article of very large consumption. Enormous quantities of it are now used in the navy, and every one knows how much of it is employed daily in private life. It is, moreover, the basis of chocolate. But we have evidence that we never get good cocoa in this country. The consequence is that all the best chocolate is made in Spain, in France, and in countries where the fine description of cocoa goes. We get a cocoa which is unripe, flinty, and bitter, having undergone changes that cause it to bear a very low price in the market. But it comes from British possessions, and is therefore sold here subject to a duty of only 18s. 8d. per cwt., whereas if it came from a foreign country, it would pay 56s. The differential duty drives the best cocoa out of the English market. Still it appears that we might supply from our own colonies this very cocoa, because, as I have said, there was exhibited from Trinidad a very beautiful sample, quite equal to anything produced in the best markets of the Magdalena, of Soconusco, or of other places on the Spanish Main. It had no bitterness, no flintiness, no damaged grains in it, but all were plump and ripe, as if they had been picked." . . . "And it is their own fault if our colonies do not produce fine cocoa, as Trinidad has conclusively proved."

In answer to the opinions expressed in this extract, I might refer the reader to what I have already stated on the subject: some of them, however, demand peculiar notice.

On the mere examination of some picked sample of cacao

sent to the Great Exhibition, and without further inquiry, Dr. Lindley emphatically pronounces, that the British colonies might supply cacao "quite equal to anything produced in the best markets of the Spanish main, even of Soconusco," and that "it is their own fault if they do not produce fine cocoa."

Professor Lindley is well known as an eminent botanist, not only in Great Britain, but throughout Europe; and it is to be regretted that he should have ever expressed such a decided opinion on matters of which he evidently is not fully cognisant, since such opinion can only tend to create and spread abroad false notions and prejudices.

Undoubtedly Dr. Lindley is fully aware that, if proper attention to culture and preparation can improve the quality of cacao, there exist also "local conditions, that is to say, the temperature, the soil, the exposure, and other circumstances," which have their share in modifying that quality. Moreover, there are two species, or, at least, several varieties of the theobroma, as I have already stated; and the real fact is, that although Trinidad cacao, prepared for the Spanish or French market, may be classed next to that of Carácas, it is far from being equal to cacao from Orituco, Guigne, Cupira, &c., in the province of Carácas; or from Pedraza, in the province of Varinas, and other places in the province of Maracaybo; much less, therefore, to cacao from the Valley of Soconusco, which, during the Spanish dominion, was exclusively reserved for the use of the royal family, and is granted, even now, to be as superior to Orituco, as Orituco may be to Trinidad cacao.

"Enormous quantities of it," says the learned professor, "are now used in the navy, and every one knows how much of it is employed in private life." But, under what form? I would ask. As an infusion—exactly as would be the case, were wheat to be similarly crushed and a beverage made of the meal. Cacao, to all intents and purposes, must be used as *chocolate*. The consequence of an opposite practice is, that the finer description of cacao goes to France, Spain, and other countries, there to be made into delicious chocolate, whilst the "unripe, flinty, and bitter" specimens find their way into the British markets; and, this will continue to be the case, so long as the infusion practice prevails in England and its dependencies.

"It is their own fault," adds Dr. Lindley, "if our colonies

do not produce fine cacao, as Trinidad has conclusively proved. The differential duty drives the best cacao out of the English market." This is, however, but one of the favourite free-trade hobbies, by which its advocates profess to account for all commercial grievances—past, present, and future; and whose sophistries distil with such a balm-like influence into the ears of the people, as apparently to exempt even a scientific man, as in the present instance, from a further examination of complex questions.

No, indeed—it is not our fault, but that of the British public, if we send them "unripe, flinty and bitter cocoa;" because this is the article they demand, and because it answers their purposes better than fine Carácas, for which, besides, they would have to pay at the rate of 16 dollars or 20 dollars—whereas they can purchase the Trinidad cacao for only 9 or 11 dollars.

COFFEE (*Coffea Arabica*).—As Trinidad has never exported much coffee, that which is grown in the island has no repute. Nevertheless, very good coffee might be produced here, and in abundance; it might even be cultivated on hilly parts. The bois immortel is planted along with the coffee to afford its protection of shade; though the latter has, in some cases, been known to thrive sufficiently well, within the intervals of the cacao ranges. The quantity exported, in 1853, was 64,115 pounds; but the greater part of this was coffee from the main-land—the island producing, generally, only a sufficient quantity for home consumption. The price varies from 7½ cents to 12½ cents per lb. The cultivation of coffee may be carried on without much expense, but a large number of hands becomes necessary for the gathering in of the berries, and their preparation. The berries are first slightly bruised, so as to separate the seed from the soft outer husk; they are afterwards washed, and then dried, when it becomes necessary to pass them through a mill to be winnowed from the inner husk or parchment, before being packed for exportation. These are operations too numerous and expensive to leave a hope for the extension of coffee cultivation in Trinidad —at least, with its present scanty population. The Asiatic islands and Brazil will, therefore, probably long enjoy the privilege they have gained of supplying the markets of the world with coffee.

Cotton (*Gossypium herbaceum*).—Cotton was once extensively cultivated in Trinidad, viz., at Mayaro, Guayaguayare, and Chacachacareo; and a few individuals then made their fortunes

by its growth and exportation. This cultivation was, however, afterwards abandoned for the more lucrative production of sugar. Though cotton is here classed amongst exported articles, the whole of such exportation is derived from the neighbouring province of Cumana. The soil and the climate of Trinidad seem to be well adapted to the production of cotton of the best quality; but the general expenditure of manual labour, and competition with countries better situated, in that respect, will, for a long time, if not for ever, prevent the restoration of that cultivation here. The cotton plant has its enemies in locusts and caterpillars; the cold northerly winds also cause the pod to *freeze*—that is to say, occasions a blight, which prevents its regular development to maturity.

Coco-nuts (*Cocos nucifera*).—The coco-palm thrives admirably in Trinidad, and is cultivated to great advantage in several districts, either for sale in the nut, or for the manufacture of oil. In a green state, the nuts are sold at five cents for three nuts; dry, one dollar per hundred, on the spot: the oil ranges from one dollar to one dollar twenty cents the gallon. The coco-palm grows best along the sea-shore, in the very sand of the beach, salt not only being necessary for its healthy growth, but to its very existence. The whole of the eastern coast, with Guayaguayare and Icacos, might be made to produce an immense quantity of coco-nuts. The whole beach, from Point Manzanilla to the mouth of the Guataro, is lined with coco-nut palms which grew there accidentally, the nuts having been originally washed on shore from the wreck of some vessel. The finest specimens, are, perhaps, along the Mayaro beach, some of them being seen to flower at the early age of three years, which is very unusual indeed—this palm commencing to bear fruit, generally, at five or six years. Its period of full bearing is at eight years and upwards, when it brings forth a bunch of flowers every month, each bunch having nine nuts, on an average, and some as many as twenty: each tree is calculated to yield, at least, one dollar yearly net, from the sale of the nuts. Coco-palms are planted at twenty-four feet apart, and require very little or no care. When arrived at maturity, a *cocal* or coco-nut walk forms an excellent pasture-ground for sheep, cattle, or any other grazing animal; poultry, pigs, &c., also fatten wonderfully on the coco-nut pulp, or the refuse of the nuts after the oil has been expressed. The almond

or pulp contains, according to Brande, 25 per cent. of oil, and the shell, 26 per cent. of the pulp. It is calculated here that thirty-three nuts give one gallon of oil: the prevailing plan is to give sixty nuts, for which a gallon of oil is returned. Excepting the establishment of Mr. John Carter, which is conducted on an improved plan, the extraction of the oil is rather a primitive process. The cultivation of the coco-palm evidently suits the habits of our population, as it requires little labour: the only matter of surprise is, that it is not carried out on a more extensive scale.

There exist in Pulo Pinang, Ceylon, and other places in the east, fine coco-palm plantations, or, as they are termed here, coco-walks. These are formed, according to S. Itier, in the following manner: the nuts required for plants are selected from healthy full-grown trees; they are laid in the ground in a shaded place, and barely covered with fine earth: as soon as the leaves become pinnated and the roots begin to appear out of the husk, they are removed and planted at intervals of from 33 to 40 feet. The young trees are manured with stale fish, guano, or compost containing a certain proportion of salt. On the coast of Coromandel, they place a handful of salt in each hole. In the best localities, the coco-tree begins to bear at between six and seven years' growth; and, it is calculated that each tree yields, annually, eighty nuts, which generally sell at the rate of 1 dollar 50 cents per hundred on an average: 5,000 trees would therefore give 400,000 nuts, yielding about 13,700 gallons of oil, or at the rate of one gallon for thirty nuts, each tree yielding three gallons. The price being 42 cents per gallon, each tree would then give a gross revenue of 1 dollar 26 cents, or a net return of 84 cents per annum, allowing 33 per cent. for expenses. The chief enemy of the coco-tree is a species of *coleoptera*, which fixes its abode at the base of the leaves, and, by degrees, penetrates into the central bud and the very heart of the palm. If not promptly removed, the tree soon withers and dies. So destructive were the ravages of this insect, at Singapore, that the inhabitants were thereby compelled to abandon the cultivation of the coco-palm. It is destroyed either by using an iron rod, hooked at the extremity, and by which the hole bored by the insect is thoroughly probed, or by pouring a strong solution of salt into the tuft of leaves.

Tobacco (*Nicotiana tabacum*).—Trinidad tobacco, from the dis-

trict of Siparia, was judged at the Exhibition as inferior only to the Havanna, and yet its cultivation is limited to a few acres of land, and the quantity thus raised is consumed on the spot where it is grown, whilst a sufficiency might be easily raised for the entire island consumption. The annual quantity of tobacco imported is 318,300 pounds, equal to £10,000 sterling. The tobacco-plant requires a light, dry, and rich soil; it is sown in September, and the young plants transplanted when about six or seven weeks old: they are generally planted two by four feet apart. When five feet high, the upper bud is cut off, as also the young shoots which spring from the axilla of the leaves: from seventeen to twenty of the latter are preserved, and, as they gradually arrive at maturity, are picked off, successively, to undergo the process of curing. This process, although most essential to the good quality of the article, is very carelessly performed here. The soil and climate of Venezuela being very similar to that of Trinidad, it will not be amiss to furnish such information on the culture of this plant there, as may prove acceptable to tobacco growers in this island. The seeds are sown in very rich and deep soil, and after forty or fifty days the plants are taken up and transplanted at about two feet apart, and in rows of nearly four feet interval; from ten to fifteen leaves only are left on each plant, in order to obtain tobacco of a superior quality. When a space of dark blue shows itself near the pedicle, the leaves are sufficiently mature to be plucked, and are carried under sheds, where they are spread out in layers, on hurdles ready for the purpose. The tobacco now becomes yellow, and quite soft; the stems of the leaves are then removed, the leaves themselves twisted together, and put up in bundles of seventy-five or one hundred pounds. These bundles are next placed on a larger heap, made of damaged tobacco leaves, and the stems stripped off; the whole heap is then covered over and allowed to ferment for forty-eight hours, the leaves being sprinkled with water, should the tobacco become too dry. After the *twists* have undergone sufficient fermentation, they are unfolded, and the leaves hung up under the shed in order to promote the evaporation of any superfluous humidity. If the tobacco is found to possess the requisite qualities, it is then made into *manojos*, or small packages of five pounds each. In case the fermentation has not been sufficient, it is caused to undergo a second process of the kind. Although proper attention to the cultivation and

curing of tobacco greatly improves its value, yet it is incontrovertible that climate exercises the main influence as regards the quality of the article, which is particularly good in those localities where the temperature is not beneath 75°. In Venezuela, they calculate that eight plants yield two pounds. It is to be regretted that sufficient attention has not yet been directed to the cultivation of tobacco in Trinidad, and particularly in Siparia, where the soil seems to be admirably adapted to its growth.

Indigo (*Indigofera tinctoria J. anil*). No indigo is at present manufactured in the island, although that plant grows wild almost everywhere along the road-sides, and might, therefore, be cultivated with success; in all probability, however, years will elapse ere the production of indigo is attempted in Trinidad; it is therefore unnecessary to offer any remarks on that branch of agricultural economy.

Arrowroot (*Maranta arundinacea*) and touloman, or tulema, *Canna coccinea*, or according to Dr. Lindley, *Canna achiras*. From the roots, or *rhizomas*, of these two plants is extracted a large quantity of nutritious starch, extensively used as food for young children, and particularly for convalescents and persons of irritable stomachs. Arrowroot and tulema are, in medical opinion generally, preferable to sago and the tapioca, and may be used in the preparation of blanc-mange, and other dishes. Arrowroot is a much smaller plant than the tulema, and thrives only in very good moist soil; it is generally planted two feet apart, and each plant or stool must be carefully moulded in order to a good return. The tulema, on the contrary, grows almost in any soil, provided it is properly planted and due attention paid to its cultivation. The plants are laid in rows, and at three feet distance. The flowers of the tulema are of a brilliant crimson, those of the arrowroot, white. This plant is usually called "tous les mois;" but this is a misappellation, and *touloman*—the carib term for the "balisier"—is its true name. At whatever time touloman and arrowroot are planted, they yield their starch only in the dry season. The planting season is generally in May: one acre gives from 2,500 to 3,600 pounds. Touloman gives no trouble in its culture; but the parasol-ants are very partial to it.

Castor-oil seed (*Ricinus communis*).—In the climate and soil of Trinidad the castor-oil plant grows to the height of twelve and twenty feet. There are two varieties, the *red* and the *white*,

distinguishable not only by the colour of the plant and its pedicles, which is violet in the one and whitish green in the other, but by several other characteristics. The red castor-oil plant is more vigorous, its seeds larger, and of a darker hue; the seeds of the white, though smaller, are in general more plump, and also contain, as is asserted, more oil. The castor-oil plant is not cultivated here with a view to commerce, but many poor people have two or three trees near their houses from which to prepare their own oil. In this preparation they follow the old system:—the seeds are grilled, then crushed and formed into a paste, which is afterwards boiled in water; this mixture is allowed to cool, the oil skimmed off, and again boiled. Oil obtained by this process is of a dark colour, has a strong scent and taste, and, as a purgative, is somewhat irritating. The best plan, certainly, is to crush the seeds and express the oil from the paste by means of a screw-press; but an improvement on the former plan, although not rendering it equal to the latter, would be to crush the seeds without grilling, and then boil the paste, as already mentioned. The seeds of the castor-oil might be exported to England with advantage, for it is very prolific, requires but little or no attention, and the gathering of the seed is a most simple task.

Carapa oil, yielded by *Carapa Guianensis* and *C. Touloucouna*.—The carapas are lofty forest and timber trees, bearing pods as large as a husked coco-nut, and containing from 12 to 14 seeds of the size of the walnut. The seeds are gathered in June and July, boiled for about six hours, then laid in heaps for eight or ten days, during which time they undergo a sort of fermentation; they are then broken, and the pulp they contain carefully taken out and kneaded into lumps of thick paste, each about 15 pounds. This paste is laid on boards slightly incurvated and inclined, and placed in a sheltered place, when the oil oozes through the mass, and runs into a vessel placed for its reception. The paste is carefully remoulded every morning and evening, so as to favour the disengagement of the oil. After 12 days, boiling water is poured on the mass, and a fresh quantity of oil of inferior quality is thereby obtained. One barrel of seeds gives about 12 bottles, or about 264 ounces of oil. Carapa oil is thick, excessively bitter, and keeps a long time. It is especially used in destroying insects, and particularly *tics*, which are at times very troublesome to animals, hundreds of them sticking to the

hides of mules and oxen in the pastures on estates. This oil is also applied by friction, as a remedy in rheumatism. It has been remarked as a singular effect, that whenever animals that have been rubbed with carapa oil are exposed to rain, the part becomes swollen. The agouti and lapo are very fond of the carapa seeds.

Sesame (*Sesamum orientale*).—Although sesame, or *Gigeree* as it is called by creoles, is cultivated here only by a few Africans, for its oily seeds, yet it is well known that large quantities of it are imported into France—particularly from Egypt and the East. The sesame oil is sweet, pleasant, and keeps a long time; it will even bear comparison with the best olive oil, and as a substitute for the latter may be used for culinary purposes; in fact, Thunberg says that in Japan it replaces butter and lard. The people here use it in preparing their food: they first heat, then bruise it, and in that state mix it with their food. Sesame grows in almost any soil; it is planted in the beginning of the wet season, and comes to maturity within four months or four months and a half; for its reception the land must be well prepared and thoroughly cleared of weeds. As the fruits, or capsules ripen gradually, and grow along the upper part of the stem, the latter is cut as soon as the lower capsules are ripe, otherwise these split when dry, and the seeds are then lost. When reaped they are tied in bundles, so as to keep the capsules together and prevent their splitting; they are then stored up in some cool place. The seeds are very small and flat, and are separated by merely beating or rubbing the bundles with the hand. It is stated that sesame contains as much as 50 per cent. of oil; and there is no doubt it might be cultivated here to advantage—if not for exportation, at least for culinary purposes.

Spices—nutmegs (*Myristica moschata*).—The nutmeg may be said to be perfectly acclimatised in the colony, and it yields nuts as good and fine as any which can be imported from the Asiatic Islands; it has not yet, however, been cultivated with a view to commerce. The nutmeg tree requires a good moist soil and plenty of shade; it grows particularly well under protection of the saman-tree. At St. Ann's government-gardens it yields about 15 pounds per tree. Nutmegs sell here at 60 to 80 cents (2s. 6d. to 2s. 10d.) per pound.

Cloves (*Caryophyllus aromaticus*).—The clove has also been naturalised, and thrives well; it requires a good, but rather dry soil, and, contrary to the nutmeg, is injured by too much shade; it is very scantily cultivated.

Cinnamon (*Cinnamomum zeylanicum* and *C. cassia*).—The latter species, or variety, is cultivated here by several persons, but a few only prepare cinnamon from it. There are to be found at St. Ann's a few plants of the *Cinnamomum zeylanicum;* they look very healthy, although planted in rather poor soil, and yield excellent cinnamon.

Pimento (*Eugenia pimenta*).—Though not indigenous to the island, the pimento thrives admirably; there are two distinct species or varieties here. Pimento is largely exported from Jamaica, and such might be the case with Trinidad also; yet it is only cultivated for its leaves or berries, which are used in culinary or confectionary preparations.

Black pepper (*Piper nigrum*) thrives very well indeed, but is cultivated by a few individuals only, and more as an object of curiosity than utility.

Cayenne pepper (*Capsicum annuum*).—All sorts of capsicums, and the *bird-pepper* (*Capsicum baccatum*) especially, are so common here, that the people take no care in preparing them for preservation as a condiment.

Vanilla (*Vanilla planifolia*).—The vanilla grows wild in our forests, but it is not the best kind. There are, it seems, two distinct species, distinguishable, not only by the size of the fruit, but also by its fragrance; the larger species is more fragrant, and also more common. The vanilla grows on those trees which do not shed their bark, generally creeping along the trunk in a straight line, the extremity and divisions hanging downwards. Rats, opossums, and squirrels, are very fond of the vanilla, and it is difficult to save it from their attacks, as they eat it as soon as it arrives at maturity. The vanilla might be cultivated here to advantage, although it eventually causes the death of those trees to which it adheres.

Ginger (*Zingiber officinarum*); Turmeric (*Curcuma longa*); Guinea pepper (*Amomum granum Paradisi*).—These plants are only cultivated for domestic purposes, not for exportation; but they succeed very well. To the above catalogue of useful plants might be added as great a number; such as the musk ochro

(*Hibiscus abelmoschus*), which grows wild here, and the seeds of which are extensively used for perfuming in France, under the name of "Ambrette;" the senna plant (*Cassia obovata*), which is cultivated by the inhabitants of Mayaro, Erin, and some other places, for their own use; the noyau (*Prunus*), the seeds and leaves of which might replace, for distillation, the cherry laurel. Many others might be given, but their enumeration would swell this sketch to too large a volume.

The following dye-woods may, however, be mentioned, viz., log-wood (*Hæmatoxylon campechianum*); this is not indigenous to the island, but grows very well in dry spots. Arnotto (*Bixa orellana*); the arnotto is indigenous, and thrives best in good soils and cool localities; it is very prolific, but is used here only as a condiment. Fustic (*Broussonetia tinctoria*) is indigenous, and thrives best in good soils and hilly districts; it is used here in wheelwork, especially for naves.

Manufactures.—There are no island manufactures, strictly so called; the manufacture of sugar is but a branch of agriculture, as the cane is not of itself a marketable article; the distillation of rum may, however, be considered as a branch of manufacture. Even cigars are not manufactured to any great extent, although this is an occupation rather commonly pursued by females; nor is furniture wrought on any large scale, with the exception of tables, wardrobes, and bedsteads. Carts, and cart and carriage-wheels, are constructed here pretty extensively, as also sugar hogsheads, and molasses puncheons. Lime is burned in sufficient quantities for the island consumption, and sells at the rate of 75 to 90 cents per barrel, being dearer than imported lime. Very common pottery and bricks are also made, but not to any extent. The manufacture of coco-nut oil is carried on by many persons, the quantity extracted varying from 20,000 to 25,000 gallons per annum. The establishment of Mr. Carter, however, is the only regular manufactory, with a steam-engine attached. Similar to this is the manufactory of chocolate, established in Port-of-Spain, two years ago, by Messrs. Crüger and Léotaud; it is worked by a steam-engine of six-horse power, which performs every operation except those of roasting, moulding, and packing. The quantity manufactured per annum is 22,000 pounds. Besides the above-mentioned manufactory of chocolate, there is another conducted by Mr. Pollonais, in which animal power is the agent.

Pitch or bitumen is also prepared for various purposes: it is particularly used in flooring stores.

Commerce. The commercial movement consists mainly, if not entirely, of imports and exports. In the year 1783, the whole trade of the island was carried on in a vessel of 150 tons, a little cacao and indigo being bartered for some coarse clothes and other necessaries. In 1797, fourteen years after the granting of the second cedula, the colony exported 7,800 hogsheads of sugar, 330,000 pounds of coffee, 96,000 pounds of cacao, and 224,000 pounds of cotton—the produce of 159 large sugar plantations, 130 coffee, 6 cacao, and 103 cotton farms. In 1802, the number of sugar plantations had increased to 192: quantity of sugar manufactured, 15,461 hogsheads; quantity of coffee, 358,000 pounds; of cacao, 97,000 pounds; of cotton, 263,000 pounds; tonnage, 15,000. In 1809, the exports had increased to 18,235 hogsheads of sugar, 460 gallons of rum, and 100,000 gallons of molasses; in addition to which had been produced, 500,000 pounds of coffee, 355,000 pounds of cacao, and 800,000 pounds of cotton.

	Sugar.	Rum.	Molasses.	Cacao.	Coffee.	Cotton.
	lbs.	gals.	gals.	lbs.	lbs.	lbs.
1819.	30,205,731	534,626	545,406	1,205,445	258,220	131,990
1829.	50,089,421	400,321	1,362,605	2,206,467	226,123	25,203

	Sugar.	Rum.	Molasses.	Cacao.	Coffee.
	hhds.	punchs.	punchs.	lbs.	lbs.
1839 .	21,422	112	18,051	2,914,068	
1849 .	30,579	718	13,151	4,378,186	28,405

The articles of export are chiefly sugar, cacao, molasses, and rum; to which may be added coffee, cotton, coco-nuts, coco-nut oil, &c.

TABLE OF EXPORTS.

	Sugar.	Molasses.	Rum.	Cacao.
	hhds.	punchs.	punchs.	lbs.
1850 .	26,075	9,884	273	3,816,728
1851 .	30,407	10,792	528	5,008,920
1852 .	35,220	12,077	817	4,216,851
1853 .	33,835	13,306	216	3,757,352
1854 .	37,746	11,748	3,267	5,427,354
1855 .	31,548	6,315	3,733	4,842,075
Average.	33,607	9,854	1,472	4,511,547

To these more important articles of export, may be subjoined, at the like average of six years, coffee, 80,630 pounds; cotton, 233 bales and 300 scroons. Almost this entire quantity of cotton may be considered of Venezuelan growth, and to have gradually increased, from 96 scroons, in the year 1850, to 703 bales and 194 scroons in 1854, and 81 bales 312 scroons in 1855. Coffee, on the contrary, seems to have been on the decrease; the quantity exported being, for the same years, 136,835, 56,391, and 48,666 pounds respectively.

I could have wished to give in pounds sterling, the value of exports for the above period of five years; but it is with difficulty I have been able to procure the required information for the two following years.

GENERAL EXPORTS.

	Great Britain.	N. A. Colonies.	United States.	Foreign States.	Total.
1852 .	£407,637	£1,649	£4,266	£33,840	£447,392
1853 .	433,869	2,107	936	17,442	454,354

EXPORT OF SUGAR, MOLASSES, AND RUM.

1852 .	364,748	1,649	772	2,963	369,999
1853 .	394,215	320	,,	15	394,550

Export of Cacao.

	Great Britain.	N. A. Colonies.	United States.	Foreign States.	Total.
1852 .	39,673	223	2,548	30,196	75,322
1853 .	35,025	1,586	480	14,185	51,276

The above tables show that our exports consist mainly, if not altogether, of sugar, molasses, and rum, together with cacao; since these amount to the gross sum of £445,321, and £446,826—the other exports representing only the trifling figures of £2,071, and £8,528. We may also gather from the same, that our exports to the British colonies of North America and the United States are very trifling—amounting, in fact, almost to nothing; viz., to £3,756 to the former, and £5,202 to the latter, for the two years 1852 and 1853; whereas our exports to other states and colonies, during the same period, reached a total of £47,359 sterling—to which amount, the principal item, cacao, contributed no less a sum than £44,381.

General Imports.

1850.	1851.	1852.	1853.	1854.	1855.
£476,910	£548,471	£493,274	£504,380	£559,098	£555,828

Average of six years. . . . £522,763

Countries in Detail.

	Great Britain.	British Colonies.	N. A. Colonies.	United States.	Foreign States.	Venezuela.
1850 .	£264,261	£22,639	£27,937	£89,497	£66,176	£6,400
1851 .	308,159	61,084	,,	97,765	81,566	,,
1852 .	254,797	67,153	,,	106,765	64,559	,,
1853 .	255,166	97,994	,,	91,034	60,186	,,
1854 .	275,558	57,714	35,352	108,894	7,152	42,959
1855 .	271,604	51,200	39,436	117,530	33,070	43,177

If, now, we wish to compare the exports with the imports, we have, as a term of comparison, the average of only two years—1852 and 1853—average of imports, £498,827; of exports, £450,873.

DETAILED IMPORTS.—1852.

Description and Quantity.	Great Britain.	British Colonies.	United States.	Foreign States.	Totals.
Corn, bush., 17,727 .	,,	£221	£1,817	£809	£2,847
Corn-meal, bls., 8,885	,,	36	6,868	,,	6,904
Rice, lbs., 2,714,169 .	£5,205	5,559	1,093	,,	11,857
Flour, bls., 39,692 .	199	1,869	37,046	638	39,752
Breadstuffs. . . .	,,	,,	,,	,,	2,423
Plantains, 3,213,700 .	,,	,,	,,	952	952
Potatoes, Yams . .	,,	1,076	,,	,,	1,076
Fish, Salted & pickled.	,,	24,623	47	473	25,143
Meats.	1,830	1,560	8,909	457	12,756
Head of Cattle, 6,101.	,,	229	,,	14,880	15,109
Stock and Poultry .	16	440	181	315	962
Lumber, ft., 3,339,182	,,	,,	,,	,,	8,725
Shooks, 24,649. . .	,,	,,	,,	,,	6,656
Hoops.	,,	,,	,,	,,	2,986
Building Lime, hhds., 1,019.	1,223	,,	,,	,,	1,223
Bricks, 1,195,120. .	,,	,,	,,	,,	2,389
	8,473	35,653	55,961	18,524	141,760
1853.					
Corn, bush., 21,520 .	,,	305	1,516	1,609	3,430
Corn-meal, bls., 7,765	,,	693	5,663	50	6,406
Rice, lbs., 3,702,986 .	8,202	8,737	430	260	17,629
Flour, bls., 34,302. .	,,	3,183	28,736	360	32,279
Breadstuffs	,,	68	1,223	,,	1,291
Plantains, 3,660,700 .	,,	,,	,,	3,158	3,158
Potatoes, Yams . .	,,	975	,,	328	1,303
Fish, salted & pickled	16	24,248	1,342	,,	25,606
Meats.	1,197	1,420	12,278	2,840	17,735
Head of Cattle, 6,842	,,	140	,,	14,338	14,478
Stock and Poultry .	14	270	38	1,541	1,763
Lumber, ft. 3,629,467	111	2,726	5,131	,,	7,968
Shooks, 27,862 . .	1,254	2,238	4,129	,,	7,621
Hoops.	2,326	232	,,	442	3,000
Building Lime, 1,500	1,424	,,	,,	,,	1,424
Bricks, 1,164,418 . .	,,	,,	,,	,,	2,478
	14,544	45,235	60,486	24,926	147,569

The above tables exhibit, in pounds sterling, the value of imports for a period of six years: the yearly average is £522,763,

while that of exports is £450,873: balance against exports, £47,954. True, a certain proportion of the imported dry goods and hardware are re-exported to Venezuela, and their value therefore ought to be deducted from the above sum of £47,954: that value, however, cannot be equal to the balance, and the colony evidently suffers a yearly drain of specie.

In the year 1831, the general exports amounted to £244,392, and the imports to £300,567—distributed as follows: Exports.—To Great Britain, £202,057; British Colonies, £30,428; Foreign States, £11,907. Imports.—From Great Britain, £182,856; British Colonies, £51,197; Foreign States, £66,514: balance against exports, £56,175, or 67 per cent.

Though partial, the detailed statement on page 279 may prove interesting.

The average value of the articles detailed in the above two tables is, £144,756—the value of the alimentary articles being £122,475; of building materials, shooks, &c., £22,281. But, the figure £122,475 does not by any means represent the real value of imported aliments, since it does not include the items expended on butter, cheese, olive oil, wine, &c.: rating the total, therefore, at £128,000, in round numbers, each inhabitant would then pay for food about £1 10s. The average of dry goods imported during these two years being £110,213, he would, in like manner, expend on clothing about £1 6s.—a rather unexpected and striking result, in my opinion; since, though we cannot manufacture our own cloth, we certainly ought to produce the greater quantity of many of the articles of food we consume; whereas, not only do we import salted fish and meats, flour, butter, &c., but also sweet potatoes and yams, corn and corn-meal, rice, poultry, &c.; and are likewise indebted to foreign and home industry for the bricks and building lime which we have "all appliances and means to boot" for manufacturing on the spot.

The rice and flour marked as coming from England and the British colonies, are East India rice and American flour. Nearly all our salted and pickled fish comes from Nova Scotia; and the greatest part of the salted meats and lumber, from the United States. We are supplied by Venezuela with fresh meat; and out of a total value of £44,500 sterling, that of fresh meat for the year 1855, is found to be £16,867.

A return of articles imported from Venezuela, during the year

1855, has been published by order of the governor, and from it we extract the following items:

	Dollars.
Plantains—7,284,700	11,121
Cattle—2,875 head.	13,907
Mules, Horses, Asses—400 head	8,903
Hogs, Sheep, Goats, and Poultry	2,960
Dried and Salted Fish, Hog, and Goat, Tasajo, and Cheese	3,970
Starch, Corn, and Peas	2,316
	43,177

Our main-land commerce is chiefly with Maturin and Guiria, within the Gulf; with Ciudad de Bolivar and Barrancas, on the Orinoco; and the island of Margarita. This trade might be improved, and greatly augmented by the establishment of steam communication, and the adoption of a more liberal tariff, on the part of the Venezuelan Government.

By seeking to establish a comparison between imports and exports, from and to different countries, we are led to the following conclusions:—

GREAT BRITAIN—AVERAGE OF TWO YEARS.

Imports . £254,981 | Exports . . £420,753

Difference—Favour exports £165,772

BRITISH COLONIES.

Imports . . £82,573 | Exports . . £1,878

Difference—Favour imports . . . £80,695

UNITED STATES.

Imports . . £98,899 | Exports . . £2,601

Difference—Favour imports £96,298

FOREIGN STATES.

Imports . . £62,372 | Exports . . £25,641

Difference—Favour imports £36,731

Thus, the only country to which we transmit more than we receive, is Great Britain; as to our other commercial connections, taken collectively, the foregoing comparison shows that we really disburse in their favour, and that, in hard cash, a yearly average, (more or less) of £213,724. Our trade with the United Kingdom would certainly seem to be the most advantageous, since the colony *apparently* receives, as annual remittances, the sum of

£165,772 sterling. But this advantage is *only* apparent, as proved by a closer examination; for the greatest part of that amount remains in great Britain, either as an income to absentee proprietors, or in payment of the interest and capital of money advanced. It would be hazardous, indeed, to draw any general conclusions as to our present state or future prospects, from a comparison of only two years; but I fear much, if the balance sheet of the colony were struck, that it would tell, I will not say against our prosperity as a people, but against our very existence as a productive community.

The above returns prove that our commercial importance hinges mainly on the cultivation of the sugar-cane. Thus, total value of exports, £450,873; amount derivable from the cultivation of the sugar-cane, £382,274; balance in favour of all other articles, £68,599; of which £63,299 pass to the article cacao; and of this sum £49,218 are received from foreign states, whilst their outlay on sugar stands at the very low figure of £2,859.

TONNAGE.

	British.	Foreign.	Total.
1851 .	38,833	23,345	62,178
1852 .	48,575	14,517	63,092
1853 .	44,171	23,885	68,056

The following table of comparative importation may be found interesting :—

1851.

Trinidad.	Barbadoes.	Guayana.	Jamaica.
Imports— £547,471	£787,977	£855,419	£1,129,776
Population—68,600	135,939	127,695	465,000

This gives the average ratio, per inhabitant, £8 2s. 4d. to Trinidad; Barbadoes, £5 15s. 11d.; British Guayana, £6 13s. 11d.; Jamaica, £2 8s. 7d. As regards Trinidad, therefore, the imports are proportionally larger than in either Barbadoes, Guayana, or Jamaica, thereby showing the importance of the former colony in a commercial point of view. In fact, the proximity of Vene-

zuela will ever make it one of the most valuable possessions of the British empire. It is to be regretted that the same comparison cannot be established respecting exports. The table, on this head, will be confined to sugar—exclusive of Jamaica, however, the position of which forms such a painful contrast to that of the others.

SUGAR EXPORTED TO THE UNITED KINGDOM.—1852.

Trinidad.	Barbadoes.	Guayana.
Cwts—483,857	743,606	846,900
PROPORTION PER 1,000 INHABITANTS.		
Cwts--705	547	664

This again shows that, proportionally to its population, Trinidad exports more sugar than either Barbadoes or British Guayana; and the article sugar may be adopted as a fair test with regard to exports; for, allowing that Barbadoes and Guayana did ship more rum, Trinidad exported, as a counterbalance, a large quantity of cacao.

By comparing the shipping inward, the following conclusion is obtained:—

	Trinidad.	Barbadoes.	Guayana.	Jamaica.
Tonnage .	62,178	93,381	116,882	105,968
	TONNAGE PER 1,000 INHABITANTS.			
	0·90	0·69	0·90	0 22½

In this respect, Trinidad and Guayana are on a par; but, alas! how depressed is poor Jamaica—Jamaica once the centre of an extensive trade with the neighbouring countries!

NOTE.—Justified by etymological and botanical analogy, encouraged also by Dr. Lindley's example, I have throughout made use of the word *cacao* instead of *cocoa*, to designate the theobroma cacao; and of the term *coco*, instead of *cocoa-nut*, to distinguish the *Cocos nucifera*. *Cacao* is of Mexican origin, and *cocos* is the botanical name of the cocoa-nut tree. Moreover, it is impossible that the application of the same term to two plants, so widely different in all respects as the cacao and coco-tree, should not create confusion in the mind.

CHAPTER VIII.

NORTHERN DIVISION.—COUNTIES OF ST. GEORGE, CARONI, ST. DAVID, ST. ANDREW.

1. County of St. George.—This county is bounded on the east by the rivers Aripo and Madamas, and a line connecting the same across the mountains; south, by Aripo and Caroni, and by the Gulf of Paria from the mouth of the Caroni, down to the Dragon's mouths; and north by the sea, from the river Madamas to the *Boca Grande.* It is divided into eighteen wards.

Port-of-Spain, the chief town of Trinidad, is situated in this county, just at the angle formed by the junction of the north-west prolongation of the island with its main land, and about two miles northward of the mouth of the river Caroni. Two spurs, running from the northern range towards the sea, encircle a small plain, from one to two miles broad, and about four miles in length, along the sea shore; the semicircle thus formed declines towards the sea in a gradual slope of about sixty feet per mile. The St. Ann's and Maraval valleys open on this plain.

The town of Port-of-Spain is built at the eastern corner of the plain, being protected by the hills forming the spur in that direction; it is well laid out, its streets running due north and south, and east and west, thus intersecting at right angles. The streets are thirty to thirty-five feet wide, with pavements and kennels at the sides, the centre being macadamized and gravelled. There are in Port-of-Spain but few public places of general resort. Brunswick-square, between Abercrombie and Frederick-streets, is a pleasant promenade, surrounded by an iron railing, and planted with trees best adapted for shade—such as the poui, angelim, roble, and other densely foliaged trees or shrubs: it has nine entrances with corresponding alleys. The promenade between King-street and Marine-square forms a fine walk, also lined with rows of trees; it is about a hundred feet wide, extending from the St. Vincent or Queen's wharf, to the Catholic cathedral, and running east and west in a line parallel with the sea. This promenade is divided, nearly in the centre, by an open plot, which

is used as a cart-stand, and from which the Almond walk—an alley planted with almond trees (*Terminalia catalpa*)—leads to the south quay, and the old jetty or king's wharf. To the eastward of the town, between George and Nelson-streets, is the market-place, which was long appropriated to the sale of vegetables, but has been lately formed into a square, and is intended to be planted out with trees. There is, also, at the north-end of the town, an open space—known as Belliard's orchard—which has likewise been laid out as a square. Westward of Brunswick-square, and between Abercrombie and St. Vincent-streets, stand the Government and Court-houses—two massive edifices on the same line, due north and south, which, in point of architecture and solidity, are far from being creditable to the architect, and which can never, by any contrivance, be made an ornament to the town. The bonding warehouse, lately erected on the south wharf, is a low building, but has a very good appearance. The gaol, at the north end of the town, between Clarence and Kent-streets, is a fine substantial building, and well adapted to its object. It is divided into the following sections :—The criminal or felons' ward, the debtors' quarter, and the lunatic asylum. These departments are conducted under excellent regulations, and the whole may be considered a model prison, as regards cleanliness, discipline, and the comfort of the prisoners. The market-house is, also, a well constructed building, consisting of a pavilion, and a large iron shed, imported from England.

The two finest erections, however, in Port-of-Spain, are the Roman Catholic cathedral, and Trinity church. The Catholic cathedral stands at the eastern extremity of the Marine-square promenade, at one of the angles of the town, and is consequently very inconveniently situated ; but it is a large and substantially built temple, in the form of a cross, with a nave and two aisles, and two small towers in front ; the wood materials are of the best country timber—cedar, balata, purple-heart, &c. Trinity church is a very neat edifice, built of stone and hard wood, with a fine square tower to the north surmounted by a spire with a gilt cross ; it has no aisles. It is situated to the south of Brunswick-square, in a spacious area, inclosed within a handsome iron railing, and having a broad pavement of slab-stones, leading from the grand western entrance to the street. In addition to these two churches, there are the following chapels or places of worship :—St. Joseph and

St. George's Chapels (Roman Catholic); All Saints' Chapel of Ease (Church of England); the Wesleyan Chapel; the Scotch, or Presbyterian Kirk; the Baptist, and Portuguese Chapels; the latter of which has been built by the emigrants from the Portuguese islands, who have also a native minister. There is, strictly speaking, no hospital-building, specially erected for the purpose; but the colonial government leases a block of houses for the reception of the sick, forming, on the whole, a very shabby and inadequate institution. The quays of Port-of-Spain are fine, solid constructions, being built of heavy blocks of stone, strongly united by metal clamps. There are two jetties attached to the quays—one, on iron pillars, projects into the sea to a distance of 600 feet, and is 30 feet in breadth; the other is formed partly on solid ground, and partly on wooden piles. A large iron shed is erected on the solid part, under which goods are deposited for embarkation, or after being landed. A small fort, mounted with cannon, stands near the junction of the jetty and the king's wharf; it was erected less for the protection of the town or harbour, than as a battery of salute and a guard-house.

Although schools are attached, in general, to the different churches and chapels, yet there are only two seminaries, strictly so called, in Port-of-Spain, that of the ladies of St. Joseph, known as the Convent, and St. George's College—both Catholic institutions—for the education of youths of both sexes respectively. The former consists of a block of substantial and well-adapted buildings, with the chapel of the Patron Saint attached. There are, in the three separate buildings of the convent, about 100 boarders, 50 day scholars, and nearly 300 poor girls; the latter receiving gratuitous instruction. St. George's College admits day scholars only; average number, about sixty. Besides several private schools, a grammar school has been established by the Ecclesiastical Board of the Church of England, for the reception of day scholars. The borough council of Port-of-Spain also maintains two public schools—one for boys and the other for girls of the poorer classes—with 120 pupils attending; in addition to which are other charity schools in town, maintained by the Church of England, the Roman Catholics, the Wesleyans, and other dissenters. Total number of pupils inscribed in town, 860; at the model school already noticed, 138; total 998.

With three or four exceptions, all the houses in Port-of-Spain

are of one or two storeys high. In the lower, or commercial part of the town, they are pretty regularly and closely built, but are more scattered in the upper part, many houses having large lots attached, which are planted with trees or flowers. These dwellings being low, and almost hidden amidst the foliage of the scattered shrubberies, gives a peculiar, and, in some parts, a rather rural aspect to the town. The view of Port-of-Spain, from the harbour, is not imposing, as the ground on which it stands is not more, on an average, than 25 or 30 feet above the sea-level. Vessels anchor from half a mile to one mile and a half, or two miles, from shore; goods are landed in *flats*, and so smooth is the water that all kinds of lumber are made into rafts, and towed to the wharves.

The town of Port-of-Spain is built on a light soil, which permits an easy and quick filtration of the surface-water to the sea. The lower or southern part of the town—known as Marine-square—consists of land which has been *made*, or recovered, from the sea within the last forty years. It is effectually protected to the eastward, against the effluvia from the great Caroni swamp, by the hills already mentioned. Bordering these hills is the dry-river—a deep ravine almost always dry, except during some very heavy showers in the rainy season. This ravine may be regarded as an almost irremediable source of noxious effluvia, particularly at its mouth, into which the sea-water flows at high tide, and, by its admixture with all sorts of filth, creates a horrible stench. Nevertheless, Port-of-Spain and its harbour may be considered as healthy. Three bridges establish a communication between the town and the eastern districts; one of them has been lately built at the terminus of the Royal road.

The town of Port-of-Spain was divided, in the year 1853, into five wards, each ward electing three councillors to form, together with two auditors for the whole, the council of the borough of Port-of-Spain. The common councillors are merely honorary members, but they elect, from among themselves, a mayor who is entitled to a salary of £300 sterling. Every male person of full age, occupying a house rated to the house-tax at a rental of not less than £20 sterling, within the borough, is a qualified elector; and every elector paying a house-rent of £75, or being possessed of an annual fixed revenue—household or landed—of £50 sterling, is eligible to the office of councillor. The revenue of the town con-

sists of the house-tax, market dues, revenues from real property, and licenses: total, 31,000 dollars per annum. The annual expenditure is—for salaries of officers, police and watchmen, streets, schools, charities, hospital and asylums, &c., maintenance of the sick and poor, &c.—altogether about 30,000 dollars.

The Port-of-Spain water-works are now nearly completed; the general outlay will have been about £26,000 sterling. The town is supplied with water from the Maraval river; two reservoirs and a filter having been built in that valley, at about three miles from town, from which a main pipe, of twelve inches bore, reduced to ten inches, brings the water to the lower end of the town—about three miles and three quarters. It is then distributed through every street by branch pipes, varying from two to six inches in diameter; hydrants are also disposed at every 500 feet, more or less, for protection against fire; there are 160 such hydrants, and they throw water over the highest houses, without interfering with private service pipes. The total supply is calculated at 1,800,000 imperial gallons per day, or 90 gallons per individual, the entire population being about 20,000 inhabitants. There are, at present, 700 service pipes, supplying nearly 1,000 houses. The length of line from the reservoirs to the town is three miles —the general fall, 122 feet. A dam and a reservoir have also been built at the entrance of the Fonds-Amandes glen, for the purpose of procuring for the town a further supply of water from the St. Ann's river. The pipe is eight inches in diameter, reduced to six, and affords water to several private individuals, to three fountains, the governor's residence, two tanks in the Queen's park, and to several houses at the north-east extremity of the town; also, from it the contemplated hospital and wash-houses will be supplied. General supply, about 400,000 gallons per day.

Port-of-Spain became the capital of the Island in 1783. On the 24th of March, 1808, under the government of Sir Thomas Hislop, it was almost entirely destroyed by fire. The amount of property destroyed was estimated at £500,000 sterling. The town was rebuilt on a better plan, and much improved by Sir Ralph Woodford, who had made regulations to prevent wooden constructions, but which were, unfortunately, overlooked by his successors.

To the west of the town, between the Royal road and the

Ariapita estate, is the public cemetery, divided into two sections —the catholic and protestant: this cemetery is the property of the corporation, and placed under its exclusive control.

To the north of Port-of-Spain is a fine extent of level pasture or meadow-land, called the Queen's Park, well fenced in with hard-wood posts and iron bars; it is used as a grazing ground, for milch cows particularly, though other animals, as oxen, horses, and mules, are admitted at a monthly fee; it forms also one of the finest race-courses in the West Indies. The great defect is the want of a sufficient number of trees for shelter to the animals pastured there: this, however, will be remedied on the growth of those planted during the administration of Lord Harris. Surrounding the Queen's Park is a fine road called the *Circular*, much frequented as a carriage-drive and for equestrian exercise.

To the north of the Queen's Park, and bordering on the Circular, is the Governor's residence. The dwelling-house is in a wretchedly dilapidated condition, but the pleasure-grounds are well laid out at the entrance of the St. Ann's valley and at the foot of the hills; it is situated in the ward of St. Ann, and receives a full supply of water from the river of that name. A botanical garden is attached to the residence, where some rare and useful plants are cultivated—such as the mocha coffee, the cinnamon, nutmeg, clove, *vanilla aromatica*, &c. St. Ann's might be rendered one of the most pleasant residences in the West Indies.

This ward is very populous and possesses several neat country seats. It is also occupied by many small proprietors who cultivate ground provisions and vegetables; a few acres are planted in coffee and cacao, and fruit trees are plentiful. The soil is generally good, but nearly the whole ward is mountainous or hilly, the highest peak being 2,140 feet. Good timber is cut in the mountainous parts, viz., cip, poui, and cedar. The ward of St. Ann is formed of three small glens, each having a stream flowing between the intervening ridges, on one of which, called Hololo, fine vegetables are grown. Roads, practicable partly for carts, and partly suited only to horse and mule passage, lead to the head of the glens. There is a catholic chapel in this ward.

Westward of Port-of-Spain is Mucurapo ward—flat, with a light soil of average quality. It contains only three sugar estates —the Woodbrook, St. Clair, and Perù—the latter abandoned.

The Woodbrook and St. Clair possess steam-engines. The model school occupies the principal dwelling-house on the Woodbrook. This ward is traversed by the Maraval river and the Eastern Royal road. On the right bank of the river Mucurapo, between the Royal road and the entrance of the valley, are St. James's Barracks, about two miles from Port-of-Spain. These fine barracks stand on a flat, permeable soil, with underground sewerage to the river, just opposite the opening of the Maraval valley, and are, consequently, exposed to the direct action of the northerly winds, which, as is well known by even the most ignorant, are very unhealthy. To this injudicious position is mainly attributable the much-talked-of unhealthiness of these barracks; in fact, the selection was a very unfortunate one, both in site, as well as proximity to the town.

Westward of Mucurapo is the ward of Cocorite—mainly hilly, and soil generally bad; a few acres planted in provisions and guinea-grass. A large conical-shaped hill (1,830 feet) called Fort-George mountain, seems to tower over the whole ward; on a summit somewhat lower (1,120 feet) is the fort of the same name, as also the signal-post, which corresponds with a similar post (740 feet) on the north side of Diego Martin, and, by notice from the latter, signals the arrival of vessels long before they enter the gulf. At the base of Fort George is the hamlet of Cocorite, which occupies a small portion of this plain towards the sea-side, and is traversed by the Royal road. At the back of the village, some extensive buildings, formerly occupied by the Ordnance department, are now used as a leper asylum. A small pier has been built at Cocorite, with a crane for the use of the Ordnance department. Besides the battery on Fort George, two others are stationed to the west of the village, which is also flanked on that side by an extensive swamp. Both Mucurapo and Cocorite are subject to intermittent and remittent fevers.

Northward of Mucurapo and Cocorite are the two wards of Maraval and Diego Martin, and westward of Diego Martin, Carenage and Chaguaramas. The three wards of Maraval, Diego Martin and Carenage, have the same general aspect, being formed respectively of the three valleys of the same name, with their intervening hills; they are therefore partly flat and partly hilly—highest peak 1,830 feet. The soil is light in the valleys,

loamy on the hills, and, in general, fertile; the soil of the valley of Maraval, however, is not so good as that of Diego Martin and Carenage. Sandstone, slate, and limestone are met with in the ridges, which also grow valuable timber—such as poui, cip, cedar, &c., with a species of bauhinia, which probably yields better hoops than any known. There are, in the Maraval ward, two small sugar estates, four in Diego Martin, and three in Carenage —in all nine—four of which employ steam-engines, whilst three have been abandoned since emancipation. Diego Martin was one of the first districts of the colony in which the cane was cultivated. Coffee, cacao, and provisions are cultivated in the hilly parts of the three wards. Maraval, Diego Martin, and Carenage are catholic parishes; there are also, in Diego Martin, a church of England parish, and a small Wesleyan station.

The Champs Elysées estate, the property of Henry Boissiere, Esq., is situated at the entrance of the Maraval valley; on it is a neat and comfortable residence, with a beautiful flower garden, and an orchard traversed by a rapid stream of clear water. The dam and reservoir have been already mentioned. A good ward-road branches off from the Circular leading up the valley to the Mocha estate; after which the ridge separating Maraval from Santa Cruz becomes rather low at the point called La Silla, or the Saddle: at this point the road crosses over to Santa Cruz. Another road passes the ridge between Diego Martin and Maraval to the north coast, near Saut d'Eau; it is used by the small proprietors settled in that part, and by the fishwomen on their road to town with fish.

The Ward-road of Diego Martin is a good carriage-road. At the extremity of the valley a signal-post has been established, which corresponds with that of Fort George. Since emancipation, a free village has been formed in the ward of Diego Martin, and a school, established in 1853.

The ward of Carenage extends to the sea on the south. Besides the small river of Cuesa, which traverses the valley from one end to the other, another mountain torrent descends the hills, not far from the mouth of the Diego Martin. There are cocoa-palm plantations along the beach, and a village has been formed in the neighbourhood of the catholic church, which is a neat stone-building, and on which the inhabitants of that impoverished district have spent *in labour* above 3,000 dollars. On the north

coast, and corresponding to the Carenage valley, is the bay of Maqueripe. The port of Carenage belongs to this ward: the population is mainly composed of fishermen. The district is unhealthy, as also the ward of Chaguaramas. This latter consists of the extremity of the north-west peninsula and the islands of Monos and Gasparillo, with Long and Begorrat's islands. This ward is entirely hilly, scantily inhabited, and more scantily cultivated; vegetables and manioc, or bitter cassava, are the principal productions, to which may be added some coffee. The port of Carenage is partly situated in this ward. Petit-Bourg, a miserable assemblage of huts, stands at the lower extremity, and is, from its position, one of the most unhealthy spots in Trinidad. Carenage is separated from Chaguaramas by a large promontory, connected with the mainland by a mere neck 2,000 feet wide, and so low that it is used as a portage. Chaguaramas, as already stated, is a fine land-locked harbour with bold water; a stream of pure, never-failing water runs down the hills into the bay. The island of Gasparillo is well known on account of its extensive caves, and the immense number of bats which, in consequence, haunt it. A whale-fishery has been established at its south extremity. The soil of Gasparillo is good, but vegetation there suffers from want of water. Long and Begorrat's islands are two small islets, whither the inhabitants of Port-of-Spain resort for sea-bathing and change of air. Monos belongs to the borough council of Port-of-Spain, as also Huevos and Pato. Two whale-fisheries are established at Monos. It has also several wells of wholesome water, and is pretty largely inhabited. A small, but neat chapel, has likewise been erected there by the curé of Carenage, with the aid of the inhabitants. The population consists chiefly of fishermen, and nothing can be cultivated there except during the wet season.

The ward of Chacachacareo consists of the islands of Pato and Huevos—uninhabited—and Chacachacareo. The latter island may be said to be formed of two smaller islets or ridges, converging towards the north till they meet, being there connected by a neck of land a few yards in breadth, and a few feet above the level of the sea—a fine little cove, with deep water, being formed between the two ridges. Chacachacareo is well populated, fertile, and once produced fine cotton; it is now cultivated in vegetables and fruits, and is noted for its fine sugar-apples and melons. Guinea-grass

grows in luxuriance, and is used by the residents for thatching their cottages. Alum has been found both there and at Huevos. On the south side of Chacachacareo is a large pond of salt-water, which might be advantageously made to yield a home supply of salt. A small catholic chapel has been erected by the inhabitants in a commanding position, and a few houses scattered around form a kind of hamlet. There is at Chacachacareo a whaling establishment, making together four on the Bocas islands. The species of whale caught in the gulf is a balaenoptera (razor-back). Whales arrive in December, but they are then so wild that they cannot be easily approached: the whaling season is from February to May, at which time the balaenoptera leaves these shores for other climates. In taking the whale, peculiar boats only are used, so that the whalers do not venture beyond the placid waters of the gulf. The method followed here is the same as that pursued on the ocean; but, no large vessels being engaged in the pursuit, when the animal has been killed it is towed to the establishment by the boats: this is a very tedious mode of procedure, and should the wind and tide be against the boatmen, it often occupies twenty-four hours. The animal is brought as near the shore as possible, the blubber cut into long slices and carried to the boilers; even this, however, is not accomplished without much trouble. Very often immense troops of sharks attack the carcase of the whale, and devour part of it before it can be removed to the establishment; but they particularly swarm around when the operation of slicing is commenced, from 1,500 to 3,000 sharks sometimes collecting in an incredibly short time, so that some of the men are then employed in killing them with harpoons and hatchets. Great waste often takes place from imperfect resources; one-fourth of the available parts of the animal being sometimes left on the spot. The number of whales caught annually is from twenty-five to thirty; quantity of oil, about 20,000 gallons. Sometimes whales come in accompanied by their young, and as the female is very fond of its offspring, the whaler aims at wounding the calf with the least possible injury. The mother, in this case, never abandons her young, but continues swimming around, so as to be easily approached and harpooned.

Huevos is uninhabited, on account of the immense number of rats which have made it their abode. On the north side of the islet is a cave swarming with guacharos.

At Monos, Huevos, and Chacachacareo, grows the lignum vitæ (*Guayacum officinale*), and, what is locally called here, country bark (*Portlandia hexandra*), an emeto-cathartic, used in the cure of fevers. These islets, as well as Pato, are noted for their centipedes, some of them being from eight to ten inches long.

Proceeding eastward from Port-of-Spain are the following wards:—Laventille; this is immediately contiguous to the town, partly hilly and partly swampy, lying between the Royal road and the Caroni river; soil generally good, with a few cacao and coffee plantations, provision grounds, and an abundance of fruit trees. The hills are of limestone, which protrudes in several parts; it is compact, of a bluish colour, with veins of carbonate of lime. From these hills are quarried stones for building purposes, and for macadamising the streets of the town and the roads adjoining; excellent lime is also manufactured from the same. Several fresh-water springs are found in this ward. Laventille has gained the well-merited reputation of being the most unhealthy district of Trinidad, which it owes to its situation near an immense mangrove swamp; the most elevated part of it is not, however, so unhealthy. No whites can live there; the coloured people suffer much, and Africans are the only inhabitants who enjoy comparatively good health. It is generally admitted, that a white man who sleeps *one* night on the Laventille heights must necessarily get fever. This is evidently caused by marsh effluvia, which, rising from the swamp, spread over the hills, hanging at a certain height above them, and descending at night with the dews; hence fever is more prevalent, and of a more serious type during the dry weather, when the dews are heaviest. In fact, were it not for the spur which extends eastward from the northern range to the sea, Port-of-Spain itself would have been uninhabitable; but this spur, acting as a barrier, is a fortunate means of protection to the town. These remarks regarding the spreading of malaria, are applicable to the other districts of the colony. A few yards from the toll-gate to the eastward of the town, is the powder-magazine.

Next to Laventille comes the ward of Cimaronero, very much resembling the former in general position and unhealthiness; however, it is not placed so much within the reach of the malaria, and its soil, near the Aricagua river, is of a better quality.

The Cimaronero river has its source in the lower part of this

ward, and the body of water is sufficiently large from the very source.

The ward of Aricagua, which follows, is partly hilly, partly flat, and very much resembling the preceding one. The Aricagua river does not reach the Caroni, but is lost in the sandy, and yet swampy soil bordering the latter river. On the right bank of the Caroni, and extending into the Cimaronero ward, is a natural savannah, called Bordonal; it is under water for a certain part of the year. The small village of San Juan stands on a high ground, northward of the Royal road, about 200 yards from the river Aricagua, and is traversed by the ward-road conducting into the valley of Santa Cruz. It is a miserable looking village, with a stone-built Catholic church, and a curé attached; it has also a school. Besides San Juan, there are two small hamlets along the Royal road, opposite to the Aranguez and Le Vivier estates; an Anglican chapel has lately been built at the latter, and a curate appointed.

The ward of St. Joseph, which comprises the small town of St. Joseph, with a population of eight hundred and eighty-eight inhabitants, together with the quarter of the same name, comes next; it is partly hilly and partly flat; soil very much resembling that of Aricagua, and very fertile along the banks of the St. Joseph river. On the flanks of the hills are several natural savannahs, looking, at a distance, like prairies, and which can be seen from the harbour of Port-of-Spain. Large blocks of milky quartz are scattered all over these savannahs, which stretch, at intervals, along the ridges to the river Arima. The small town of St. Joseph was founded towards the year 1577, and was for a long time the chief town of Trinidad. It stands on a narrow eminence at the entrance of the Maraccas valley, has some few neat and comfortable houses, and is mainly inhabited by Spanish families, descendants of the former possessors of the island. Two streets, pretty steep, lead from the Royal road into the interior of the town. At the north end of St. Joseph's are the barracks, in which are generally stationed a company of white troops; in 1838, however, they were occupied by a corps of blacks, recently formed of Africans liberated from slavers. On the night of the 17th of June, 1838, these savages revolted, fired on their officers, and part of them succeeded in making their way eastward, in march, as they fancied, to their native country. They were met at Arima

by an armed militia force, and several were killed; in fact, this attempt at rebellion ended in the death of forty of those deluded men, of whom three prisoners underwent military execution.

In 1595, Sir Walter Raleigh having entered the gulf of Paria, sent some of his boats up the river Caroni, from which he passed into the St. Joseph tributary, and, having landed his men near the town, captured it. St. Joseph is a catholic parish, with a neat stone-built church, from the tower of which one has the command of a most extensive view. The Maraccas ward-road joins the town near the barracks.

The hilly parts of the above wards are inhabited by small proprietors, the majority of them being emancipated labourers; they cultivate provisions, some coffee and cacao, and generally work out on hire. The plains are cultivated in canes; and in Laventille is found one sugar estate (abandoned since) with a cattle mill; in Cimaronero, four estates, of which one has a water-mill, and another is a cacao plantation; four in Aricagua, on one of which is a water-mill, and on two, steam-engines; six in St. Joseph, of which one is furnished with a water-mill, and one with a steam-engine; the others have cattle-mills. There is also a cacao plantation in St. Joseph. Out of the above estates, the three having water-mills manufacture from 500 to 550 hhds. of sugar each, under favourable circumstances. A quarry of excellent building stone has been lately discovered in the ward of Aricagua, and supplies macadam for the adjoining portion of the Royal road: very pure gypsum may also be obtained from the hills near St. Joseph, and a snow-white clay, at the foot of the high ground on which the town is built. This latter is used for whitewashing.

Northward of the above wards are the following:—Santa Cruz, Maraccas, and Las Cuevas—the latter stretching along the sea-shore, and bounded on the south by Santa Cruz and Maraccas. They bear the greatest resemblance to each other in every respect, and are for the most part hilly—Maraccas and Las Cuevas especially. The soil is in general of the best quality, light and sandy in the valleys, and a clayey loam resting on schists and limestone on the hills: these are generally steep, and the valleys rather damp and warm. The valley of Santa Cruz—in all respects the richest, and also the largest in Trinidad—is entirely cultivated in cacao, and contains some of the

finest cacao estates to be found in the island. They were once exclusively owned by the Spaniards—the first settlers and proprietors of the island—but the greater number have changed hands within the last twenty years. Nearly at the entrance of the valley, two small sugar estates were established since emancipation; but they are now in an abandoned state. Coffee and provisions are cultivated on the hills. The valley of Santa Cruz branches off into several smaller glens, each being irrigated by its respective stream, which also carries off its water to the Aricagua river. The road to Santa Cruz traverses the village of San Juan, and establishes a communication with Maraval over the *saddle*, whilst another section crosses the mountains, at the end of the smaller glen of Gasparillo, to Maraccas bay, in the ward of Las Cuevas; it is, however, but a mere path through the high woods. Santa Cruz is a catholic parish, with a village.

The valley of Maraccas extends northward of the town of St. Joseph, from which it is separated by an elevation of the land; it is much more contracted than Santa Cruz, and the surrounding ridges are higher, particularly at its extremity. Cacao, coffee, and provisions, are the only cultivations. The vale of Acono is a dependency, or branch of the Maraccas valley.

Las Cuevas is still more hilly than Maraccas, and does not contain above 800 acres of flat land: these form the two estates of Maraccas and Las Cuevas, situated respectively on the bays of the same name, and separated by a steep ridge. These two estates are cacao plantations, drained by the two streams of Maraccas and *Quebrada de Hierro*, or the iron ravine. The produce from the above estates is carried to town in large open boats, or small sloops.

The highest mountain of the colony is situated between Las Cuevas and the extremity of Maraccas valley; it is called Las Cuevas, or *el Tocuche*, and is 3,100 feet high. At the bottom of Maraccas valley is a water-fall, from a height of about 340 feet, and remarkable for the nearly perpendicular cliff of the mountain from which it descends; this may be regarded as the source of the St. Joseph river. About one mile and a half from the cascade, on the right bank of the river, almost within its bed, and at the foot of a high hill, is the mineral spring of Maraccas; it contains a small proportion of sulphuretted hydrogen gas, epsom salts, &c. These mineral waters have not yet been tested to an extent suffi-

cient to warrant a decision on their medicinal properties; but they have been used in a few cases of nervous debility particularly, and have proved efficacious; this spring, therefore, will be found of great advantage to invalids. It is in that part of the mountains, stretching between Santa Cruz and Maraccas bay, that Galena was found by Mr. Darmany, as before related. Very valuable timber abounds in these wards.

Tacarigua, to the eastward of St. Joseph, is in general more level than the latter ward, a small section only to the north being hilly; the plain slopes very gradually towards the Caroni. The banks of this river are somewhat higher than the adjacent plain, which, being in some parts of a retentive nature, is not easily drained. The soil of the ward is, in general, light—too much so, in a few spots.

Tacarigua, strictly so called, is more fertile than Arouca. It is here proper to remark, that the quality of the land gradually improves from Port-of-Spain to St. Joseph; but from St. Joseph, eastward, it becomes gradually poorer, until we reach the table-land between Aripo and Cuare. Eastward of Cuare, it again improves until meeting the fertile districts of Oropouche and Manzanilla. The hilly parts of Tacarigua, and also portions of the plain, are cultivated in provisions, the rest in canes, there being eleven sugar estates in this ward, of which only two are worked with cattle mills. The river Tacarigua traverses this ward, flowing from the valley of Caura; it supplies three water-mills. On the left bank of the river, and immediately southward of the Royal road, is the parish church of St. Mary, not far from which is the country-seat of the late Mr. Burnley. Between St. Joseph and the Tacarigua river, houses scattered on each side of the road form a rude village. Another village, on a more regular plan, is situated opposite the Orange-grove and Dinsley estates, on lands of the Paradise, an abandoned sugar estate. Two miles further eastward, is the village of Arauca, with a catholic church and a presbyterian chapel.

Next to Tacarigua are Arima and Guanape, very much resembling each other in point of soil and general features. Of these wards, a small part only is hilly, the greater portion being flat: the soil is in general very poor, except on the hills and along the rivers—such as those of Arima and Guanape—where there is a belt of alluvium, very rich and well adapted to the cultivation of

the cacao. The soil of the plain consists, in most parts, of a coarse, yellow clay, very retentive, and consequently cold: cortaderas, melastomaceæ, and timites grow in abundance, as also fine poui and balata timber. Between the Guanape and Aripo, the soil is of the worst description; wild pine-apples, cortaderas, and timites, are particularly abundant—some of the *timitales* or timite-groves resembling marshes. A small section of Guanape is covered over with siliceous pebbles and a meagre vegetation. Arima and Guanape are almost exclusively cultivated in cacao; they also produce some coffee; but the growth of provisions is much neglected, though maize, plantains, yams, manioc, &c., grow to perfection in the best tracts. There is also a great abundance of good timber, such as carapa, yoke, olivier, and tapana, besides poui and balata, already mentioned. These two wards are sparingly cultivated, and the population scanty, on account of their bad soil. Guanape, Arima and Tacarigua form, perhaps, the most healthy districts of Trinidad, and newly arrived Europeans are not therein subject to the usual country fevers, unless imprudent or addicted to intemperance. Several natural savannahs are found in the ward of Arima—viz., Piarco, Piarquito, Arima, and O'Mara: they produce but a coarse grass upon which animals do not thrive. There is, in the ward of Guanape, the small village of Maturita, on the banks of the Maturita river, and skirting the Royal road; also d'Abadie's village, and that of Arima, in the ward of the same name. The latter village, situated at the foot of the northern range, on the right bank of the river Arima, and at the head of an extensive plain, sixteen miles from Port-of-Spain, is well laid out; its streets are wide, and intersect each other at right angles, a large square also being in the centre of the village. It has its gaol and police station; and at the eastern side of the square stands the catholic church, built of wood and *tapia:* the inhabitants are poor, the houses built of hardwood and tapia, thatched with timites, and whitewashed, both out and inside, with white clay.

The village of Arima was, for a long time, an Indian mission. Soon after the settlement of the colony, these Indians had been formed into two missions, at Tacarigua and Arima. But as the formation of *ingenios*, or sugar estates, was proceeding eastward, they were removed to the quarter of Arima, where a village was formed, and houses built by them, on about one thousand acres which had been granted for the formation of a mission, along the

right bank of the river, and as the full and unalienable property of the inhabitants. The mission of Arima was settled and governed on the same plan as all such establishments in the Spanish colonies. The Indians had their own municipal government, the first and second alcade being chosen from among themselves, but under the control of the missionary priest. After the death of the missionary superintendent, at the conquest of the island, a *corregidor* was appointed, as also a *protector*, to whom the Indians could appeal against any arbitrary act of the corregidor. All Indians capable of labour were obliged to work two days in the week, for the support of the aggregate members of the community, who, in general, were employed in keeping the village clean, and cultivating the land in common, the proceeds being distributed to each house or family equally: each head of a family had, besides, his own allotment or *conuco*, which he cultivated for his own private benefit and advantage. They were not, strictly speaking, subject to taxation, but were bound to assist in performing any public work within the limits of the mission, when ordered by the corregidor: they had also to accompany him whenever required, on wages. The Indians were considered in the light of minors, and could not sell or otherwise dispose of their property, which however descended to their natural heirs: a very wise provision indeed, since the moment they became emancipated, they sold what property they had for a mere trifle. Once every year, they elected, with the sanction of the corregidor, a king and queen to preside over their festivities, and to act as their principals on solemn occasions. The church of Arima was built almost entirely by the Indians. In 1834, when a stipendiary magistrate was appointed, the Indians were brought under the common law, and the corregidorship was abolished. In 1849, after the passing of the territorial ordinance, the lots in the village were put up for sale at an upset price—a measure the legality of which is highly questionable, as far as the Indians were concerned, since the lands and lots in the mission had been granted to them as a compensation for property of which they had been deprived. The Indians of Arima called themselves *Califournans;* but few of them are now alive, though the patriarch (about one hundred years old), and his wife, are good specimens of the race or tribe. The old man is short and square-built, with high cheek bones, small eyes, and straight, white hair; his wife presents a similar appearance, and both are borne down by the

weight of years. Pascual is always gay, and seems satisfied with his lot; he is fond of spirits, and becomes drunk whenever an opportunity is afforded; he is otherwise most honest and peaceable. The old man has sold his *conuco*, and now depends upon the *padre* or parish priest for his maintenance. Two schools, one for boys and another for girls, were once maintained for Indian children, but, owing to the paucity of attendance, are no longer so.

The village of Arima was formerly, and for a long time, celebrated for its festival of Santa Rosa, the patron saint of the mission. On that day the Indians elected their king and queen—in general, a young man and young girl—and all appeared in their best apparel and most gaudy ornaments. The interior of the church was hung with the produce of their industry—bunches of plantains, cassava cakes, and the fruits of the season; game of various descriptions, coincos, lapos, parrots, &c., and draperied with the graceful leaves of the palm tree. After mass, they performed ceremonial dances in the church, and then proceeded to the *Casa real*, or royal house, to pay their compliments to the corregidor, who gave the signal for dancing and various sports—among others, that of archery, in which the men exercised themselves until a prize was adjudged to the best marksman. People from all parts of the country would resort to Arima for the purpose of witnessing the festivities, which were invariably attended by the governor and staff. Sir Ralph Woodford, in particular, always took the greatest interest in the mission, and every year would distribute prizes to the children of both sexes, who deserved them by their good behaviour, and their improvement at school. Santa Rosa's day was really a gay anniversary, at which the poor Indians, the simple children of *Jere*, were, for the time, the principal actors, and during which they forgot both the loss of their heritage, and their own individual serfdom.

The 30th of August is a holiday still, but bears quite a different character: people still crowd to the village from different parts of the island, but there are no more Indians, neither are their oblations to be seen adorning the church; their sports and their dances have passed away with the actors therein, and, in their stead, quadrilles, waltzes, races, and blind-hookey are the present amusements of the village.

Northward of Tacarigua, Arima, and Guanape, are the wards of Caura and Blanchisseuse. They are hilly, but the soil is, in

general, very fertile—particularly that of the valley of Caura. This valley, which is watered and drained by the river Tacarigua, is considered as the most picturesque spot in the whole island—in fact, it is described by visitors as a perfect *paradise*. It is cultivated in cacao, coffee, and provisions: the inhabitants are mostly of Spanish descent, and the Spanish language is universally spoken. Blanchisseuse stretches along the sea, and is entirely hilly. The ward-road of Caura has been lately extended to this ward, but it is barely more than a bridle-path. Blanchisseuse communicates with the town by sea, or by Santa Cruz, through Las Cuevas and Maraccas: there are in it two settlements—those of Filette and Blanchisseuse, with a Roman-catholic church in common. Cacao and provisions form the staple cultivations: the population is composed almost entirely of descendants of Spaniards, each settler being allowed to occupy five quarrées of land of the crown, on paying a quit-rent.

It may be seen, from the above description, that the county of St. George is, for the most part, hilly; the soil excellent in some parts, and altogether barren in others. Cacao is the chief produce, and is cultivated in the valleys and the river-hollows; the roads are generally good; population 39,659—more than half of the whole population of the island.

County of St. David. Only two wards have been formed in this county—one in the north and the other in the southern division; the district itself is but imperfectly known, as the greater part of it is still covered with high virgin forests. It is in general hilly, and the high-lands would appear to be very fertile, whilst the level are of the worst description; but a tract of undulating land, near the river Oropouche, is of the best quality. The ward of Toco, in the northern division, extends along the sea-shore; this ward is entirely hilly, and parts of it of very difficult access. It is particularly well adapted to the cultivation of cacao, coffee, and provisions; plantains grow luxuriantly, and some of these *walks* on the banks of the Rio Grande, of more than sixty years' growth, are still thriving and productive, almost without culture. There was formerly, at Toco bay, a sugar estate, but it has been abandoned since emancipation. The want of safe harbours, and the difficulty of communication, either with the Bay of Toco, or with town, will be felt, for a long time, as a great obstacle to the prosperity of that ward, which otherwise would soon rise in im-

portance as a cacao and provision-growing district. There is a land communication between Toco and town, along the sea-shore and across Matura and Oropuche to Arima; but it is a mere track, and scarcely fit for mule-traverse. The ward of Toco abounds in excellent timber, and cedar-boards are a regular trading commodity.

The ward of Tururе in the southern district is partly hilly, partly level: the settlements of Cuare, Tururе, and la Ceyba, with a few plantations situate along the banks of the Oropuche and Matura, are the only inhabited parts of this ward. The hilly parts are imperfectly known; the soil near Oropuche and Matura is excellent, but nothing can be worse than the tract between Aripo and la Ceyba. The settlements of Cuare, Tururе, and la Ceyba were formed, in the year 1816, of disbanded soldiers from the first West India regiment. These settlements, or villages, ranged along the banks of the rivers bearing their respective names, and the soldiers were located thereon, with a grant of sixteen acres of land to each man. They were placed, to a certain extent, under the supervision of their serjeant, who was allowed a larger and more convenient dwelling, on condition of admitting travellers to a temporary lodging, when requested so to do. Some of the locations also bordered along the road leading to the eastern coast, with a view, it seems, to keep that line in good repair, as well as to place labour within the reach of the neighbouring proprietors of estates; but the experiment proved a complete failure—the *King's men* (as they called themselves) being too proud to become day-labourers. In the year 1849, after the passing of the Territorial Ordinance, the lands of these and other settlers were surveyed, and fifteen acres granted, free, to each settler or his descendants; but the lands of Cuare, la Ceyba, and Tururе being of the very worst description, the occupants will be soon compelled to give up their property—particularly as the tax is levied on the land, irrespective of its quality.

Cacao, a little coffee, and provisions are the only productions. The cacao plantations are along the rivers Oropuche and Matura, and the article is brought to Arima on mules. The Oropuche is a fine stream, but is not accessible to craft, in consequence of the heavy surf which breaks all along the Matura shore, and of the bar at its mouth: this river is also noted for the quantity of *huillias*, or water-boas, it contains.

The county of St. David, as may be inferred from the above sketch, is very thinly populated, and scantily cultivated: a few cacao plantations, on the sea-border and on the banks of the rivers Oropuche and Matura, with a growth of rice and provisions, only sufficient for the consumption of its inhabitants, form the whole of its productive industry. The hills and undulating parts of this county are fertile, but the plain is desperately barren; this latter circumstance, connected with the want of a good sea-port, will be, for an indefinite period, a serious hindrance to the progress of this district. One single ward-road, or rather trace, branching off the Royal road, between Valencia and Aripo, connects Matura and Oropuche with Arima; it then follows the Matura river to the sea; from the mouth of the Matura along the beach to Salibea bay, and thence, across the hills, to Toco. Population 913—of which 187 are protestants, and 722 Roman catholics; males, 533; females, 380.

County of St. Andrew. Only one ward has been formed of this county, viz., that of Manzanilla. The only inhabited portion is that comprising the settlements of Manzanilla and Morne Calabash: these were formed, like those of Cuare, Turure, and la Ceyba, of disbanded soldiers, on the same plan and with the same views, and were brought under the common law, in the year 1849—fifteen acres of land being granted free to each settler or his descendants. For many years, the settlers in St. Andrew had as their superintendent a medical man. They were on half-pay, and every month a drogher was despatched from Port-of-Spain to carry provisions to the settlement, and return with their produce to town—the owners of the produce travelling generally by land. The ward of Manzanilla—and the county of St. Andrew in general—is fertile; in fact, Morne Calabash and Manzanilla may be classed among the richest soils of Trinidad. "Plant a stampee (the smallest silver coin) and a doubloon will grow," is a common proverb of the inhabitants, whereby to express their opinion of the fertility of the soil; and really the whole tract bordering on the sea, and from about eight to ten miles inland, is of the best description; the surface is undulating, and lavishly produces those natural indexes of fertility—carats, cedars, wild fig-trees, balisiers, &c. That section of the colony would be densely populated were it not for the great difficulty of conveying the produce to a market; as, except the small port

under Point Manzanilla, there is no shipping-place along the whole line of coast. At one time, it was in contemplation to cut a canal of communication between the Oropuche and Caroni, and the survey was actually made, in 1804, by Colonel Rutherford: it started from the junction of the Sangre Chiquito with the Oropuche, reached the mouth of the Cumuto, and then followed the left bank of the Caroni to its junction with the Arauca. Such a canal would certainly have afforded the advantage of draining the country which it traversed; but it is to be feared that, during the dry season, it would have had too little water to be of any utility in the way of transport: a tram-road would be by far the most advantageous medium of connecting the counties of St. Andrew and St. David with the gulf of Paria, and so with Port-of-Spain. All that has been said regarding Manzanilla, is pretty applicable to the whole county of St. Andrew. That part of the country contiguous to St. George and Caroni, is barren; but from the river Cunape eastward, the quality of the soil improves from deep clay to a black loam, near Morne Calabash—where, as already stated, it becomes of a very superior, and even first-rate quality. The lands in the whole county are undulating, or generally hilly. It is traversed by the high-road leading from town to the eastern coast: at Morne Calabash the road branches off in two directions—to Manzanilla on the north-east, and to the Cocal on the south-east—thus establishing a communication, along the sea-shore, with Mayaro. Population, 257—145 males, 112 females. Church of England, 175; church of Rome, 81.

County of Caroni. This county has been divided into six wards: Upper and Lower Caroni, Chaguanas, Carapichaima, Savanetta, and Couva. Upper Caroni possesses a great variety of soils, from the worst to the best; the level section is a cold bluish or red clay; the *vegas*, or river hollows, and the undulating land towards the east and south are excellent. Maize and cacao are almost the sole cultivations; plantains also thrive remarkably well, but are not extensively grown, on account of the annual flooding of the Caroni and its tributaries. The only parts under culture are along the banks of the rivers—such as the Cumuto, Tumpuno, Arima, and Caroni, or in their immediate vicinity. The produce is taken down the rivers to town, except that from Cumuto, which is brought to Arima on mules. Nearly all the properties in this ward are owned by the mixed descendants

of Indians and Spaniards—many, especially of the latter, being emigrants from the neighbouring province of Cumana—and little or none but the Spanish language is spoken throughout this district. Venomous snakes are abundant, principally along the Tumpuno and Arena; and parasol ants are a regular pest—some of the best tracts remaining unoccupied, on account of their depredations. There are regular groves of cedar towards the upper course of the Tumpuno, which might be formed into rafts and drifted down to the Caroni during the overflow of the rivers. Cacao yields more abundantly in this ward than, perhaps, in any other part of the colony. I know an instance of 1,000 trees, about 18 years old, yielding 32 fanegas, or 3,500 lbs.—whilst the average return, in other parts, for the same number of trees, is about 1,500 lbs. only. Maize is chiefly cultivated during the dry seasons. Three roads connect this ward with the Royal road:—one from the junction of the Guanape and Aripo, which reaches the Royal road just at the eastern extremity of Arima—this is the Cocorite road; another runs a little westward of Tumpuno, crossing the O'Mara savannah to the south-west of Arima—it is known by the name of the O'Mara road; the third leads from the mouth of the Mujico to d'Abadie's village, and across the Piarquito savannah to the Royal road. But the Caroni river is the real highway to town; it is formed in this ward by the junction of the Guanape and the Aripo; half a mile lower down it receives the Tumpuno. The banks of the Cumuto and Tumpuno are high and steep, their waters turbid and yellow; they both flow from Mount Tamana. The banks of the Caroni are higher still, the bed is muddy, and its course excessively winding. After the junction of the Tumpuno, the depth varies from one to four feet down to the point reached by the tidal flow, and from six to twelve feet below that point to its mouth; the shallow or mud-bar at its mouth can be crossed only at high-tide. The mean time descending in a canal from the mouth of the Tumpuno to the sea is eight hours; but going up or against the current is very tedious and much prolonged. In the wet season, the Caroni, Tumpuno, &c., overflow their banks after heavy showers, and inundate the country around, for several hours, after which the waters retire, leaving a fertilising deposit on the soil. The bed of the Caroni is blocked up with fallen trees and bamboos, which much obstruct the navigation of that river: it will be difficult to prevent, or effectually

to check, such a disadvantage, because the banks of the river being of alluvial formation, trees and clusters of bamboos slide down by their mere weight, after the soil has been saturated by rain or overflowings. However, something might be done, by applying part of the ward-funds to keeping the bed of the river in good condition, instead of wasting the same on roads which only serve for pedestrians or horsemen.

Lower Caroni and Chaguanas wards may be said to be entirely level—a great part of their extent being occupied by what is called the Grand Savannah, and an extensive mangrove swamp, which forms, as it were, the delta of the Caroni. The eastern part of the lower Caroni ward is under cultivation, cacao and sugar being the staple productions. The estates generally are situated on, or near the banks of the Caroni. The soil is partly light and partly clayey, and the locality rather damp; but the sugar manufactured in this ward is generally very fine; the produce is carried down the river to the shipping-place in large flats, carrying from ten to twelve hogsheads each. There are, also, a few sugar estates in the ward of Chaguanas, along the river of that name.

From the eastern extremity of Port-of-Spain to the ward of Chaguanas, for about eleven miles along the sea-shore, and from four to eight miles in breadth, extends an immense mangrove swamp, and further inland the Grand Savannah. This latter covers an area of several hundreds of acres, and is, in some places, lower than the adjoining lands; as a consequence, it is completely overflowed during the rainy seasons, and that, to such an extent as to preclude all communication across it. The soil being of a clayey nature, becomes quite soft, and animals are known to sink in its mire to the very knees. Part of the savannah is boggy, and a sort of coating has been formed by the interweaving of aquatic plants, and the accummulation of vegetable debris; so that—very similar to the peat-bogs of Ireland—a sort of undulating movement is communicated to the entire surface by a person's walking, or even treading on the treacherous crust. Along the banks of the Caroni there is a belt of forest trees; and beyond that belt commences the savannah. About two miles S. of the river is a large pond of fresh water of a reddish colour, called the Bejucal: this pond swarms with fish, and immense quantities of *cascaraduras* are taken in it annually; the *pipa-frog* is also caught there. The manner adopted for fishing in the *Bejucal*

is the following:—the fisherman makes a sort of raft with rushes, and then ventures out on the deep water, throwing his cast-net, which he generally withdraws fully laden with fish.

Westward of the *Bejucal* is the *Cascaradura-hole*, very deep and in the centre of a bog. The savannah extends southward of the Bejucal to the river Chaguanas. Westward of the savannah, and along the sea-board are the mangrove swamps, dotted over with ponds of salt or brackish water, and traversed by several natural canals. It is a hard task, and not altogether free from danger, to venture into these swamps, as it is necessary to leap, almost from root to root, to take any step in advance.

Between the Royal road and the Caroni is the first pond, that of *Maître Jacques;* it communicates with the sea by a canal. To the south of the Caroni are three ponds; then comes the Blue river, an outlet from the centre of the savannah. To the south of the Blue river are several ponds of different sizes, and among them the *Great and Amand ponds;* next is the *Small river*, or *Amand* canal. Between the latter and the Blue river is *Grand-point*—the only spot between town and Savanetta where a landing can be effected at all tides. Next to *Amand canal* are the *Mud-pond canal* and the river Chaguanas: the latter rises in the Montserrat range, and after running along the outskirts of the Caroni grand savannah—from which it is separated by a belt of high wood—it crosses that part of the savannah which stretches along the sea-board.

To the east of the mangroves, bordering on the savannah, are several ponds, the principal of which are *hard and mud* ponds, which are drained off to the sea by several canals. Southward of Chaguanas is Cipriani's canal, which communicates with the river Chaguanas.

The Caroni or Grand Savannah is regarded, and has been hitherto reserved, as a public pasture-ground, to which the working animals—principally cattle and mules—are sent from various estates for the advantage of a more extensive grazing, out of crop. Annually in March (or sooner or later, according to the dryness of the season) fire is set to the savannah, in order to burn up the sour and rank grass, and sometimes this fire keeps alive for weeks—the dense dark smoke spreading and hanging over like an immense cloud.

It has been observed, as the beneficial result of this yearly

burning, that the quality of the grass improves, and the shade-trees grow more thickly. When the colony was first settled, the Grand Savannah was renowned for the immense quantity of aquatic game and parrots that thronged there, and which were eagerly hunted, for sport or subsistence, by the inhabitants. Ducks, teals, herons, flamingos (*Ibis*), &c., then swarmed in the ponds, and the mangrove, and guava trees especially, were literally covered with ramiers and parrots: but the quantity has diminished in an incredible degree, particularly since the practice of firing the long grass, which afforded shelter to the feathered and other game. Lapos and other animals of the chase are also caught in great numbers, when running confusedly in all directions from the course of the fire. From the mangroves along the Caroni, Port-of-Spain gets a large supply of fuel.

Wards of Carapichaima, Couva, and Savanetta.—Next to Chaguanas lies the ward of Carapichaima, and in succession southward, Couva and Savanetta: they are bounded on the N. by Chaguanas, on the S. by Pointe-à-Pierre, on the E. by crown lands, and, on the W. by the Gulf. These wards very much resemble each other in point of soil and general disposition, and may be said to form a perfect level, except towards the interior. The soil is partly sandy, partly clayey, and not of the best description, excepting, however, on the banks of rivers: the soil of Couva is, on the whole, considered as being of a better quality,—the crab-lands, especially, being very productive—and that of the lower part of Savanetta is also very good. These wards being flat, are not easily drained, and are consequently damp. The water is very shallow along the whole length of coast, and mangrove swamps occur at frequent intervals; as a necessary consequence, fevers are rather prevalent.

Cane, cacao, and ground provisions are pretty generally cultivated; the two latter, however, in the interior only, where the land is undulating. About sixty families of mixed Spanish blood have settled in the heights of Couva—in fact, nearly reaching the fountain-head of the river itself—on a very fertile tract, where they have planted about 100,000 cacao trees; some of these *conucos*, indeed, may aspire to the dignity of cacao plantations. They cultivate, also, maize, manioc, plantains, &c., and these articles are sold cheaper in Couva than in, perhaps, any other district of the colony. Sugar, the grand staple of these wards, is, in general, of

good quality. Nearly all the mills are driven by steam-engines; several sugar estates have, however, already been abandoned in Carapichaima and Savanetta, since emancipation.

The following water-courses drain these wards, viz.,—the Hondo, Caparo, Arona, and Couva, which separates Couva from Savanetta. This latter, the largest river of the whole district, has for its main tributary the Montserrat ravine, which flows from the adjoining mountains, and unites with the Couva. There are, also, several natural savannahs in these wards,—one on the right bank of the river Couva, near its mouth; another on its left bank, near the Brechin castle estate; and a third, higher up. The wards of Carapichaima, Couva, and Savanetta abound in good hard-wood and other timber—poui, balata, carapa, cedar, copaiba, &c. Several villages have been formed there since emancipation. The means of communication are very imperfect, and produce can be shipped only at high water. The Royal road from Port-of-Spain to San Fernando, traverses these wards; and from it branch off several ward-roads. Carapichaima, Couva, and Savanetta form, together, the Anglican parishes of St. Andrew and St. Philip, and the catholic parish of Couva.

The county of Caroni is generally level, and even flat. The quality of the soil is very various. It is, in general, a light sandy loam, resting on a substratum of clay: as a whole, it is not considered as very rich, except towards the interior, where the land is waving. The *vegas* or river-hollows are, also, of excellent quality. Sugar, cacao, and provisions are pretty generally cultivated, and the sugar is of fine sample. There are, perhaps, more Spanish families of mixed blood in this county than in any other: it is, however, thinly inhabited.

Population in 1851, 7,107 inhabitants—males, 4,187; females, 2,920. Church of England, 2,153; Catholics, 3,100.

CHAPTER IX.

TOPOGRAPHY—SOUTHERN DIVISION.

THE southern division comprises four counties, viz., Victoria, St. Patrick, Mayaro, and Nariva.

County of Victoria.—Bounded on the N. by the county of Caroni; on the S. by a line running E.N.E. from Siparia, and intersecting the Guataro at about 10° 13′; on the E. by a line drawn from the latter point to Mount Tamana; and on the W. by the sea, and part of the south-western side of the lagoon of Oropuche. This county is naturally divided into four sections—the section of Point-à-Pierre, N. of the Guaracara; that of N. Naparima, N. of the river Cipero; that of S. Naparima, S. of the same river; and the district of Savannah Grande, to the eastward of the Naparimas.

The section of Pointe-à-Pierre is bounded on the N. by Savanetta; on the S. by the river Guaracara; on the W. by the gulf; and on the E. by crown lands. Pointe-à-Pierre has been divided into two wards. This district is level or gently undulating on the S.W., and hilly on the N.N.E., towards the Montserrat hills. The soil is generally a light loam, with the exception of some veins which are clayey and not very productive; but its quality improves, and it becomes more fertile as it makes a nearer approach to the above range; it is very productive along the banks of the Guaracara. The principal productions are sugar and ground provisions. There are in this section at present but five sugar estates, several having been thrown out of cultivation since the emancipation.

The river Guaracara rises, as previously stated, in the Montserrat hills, between two spurs, one of which terminates at Pointe-à-Pierre on the N., and the other at Mount Naparima, on the S. The river is navigable for a short distance, for flats and boats.

On the Plaisance estate, and in its vicinity, are to be found the thermal and mineral springs I have already mentioned. After Port-of-Spain had been almost entirely destroyed by fire, in the year 1808, it was in contemplation to erect the new capital at

Pointe-à-Pierre, on the La Carriere estate, both on account of its deep water and the direct line of its position with the Bocas or Dragon's mouths. If this district and the adjoining country ever became thoroughly settled, the formation of a town in that locality would be well worth consideration. For a town built on the Perseverance or La Carriere estate, would possess advantages of which San Fernando must for ever be deprived, viz., a good port, excellent building materials, and the proximity of good water. The mission of Montserrat, which is laid down on all our maps, is no longer in existence, its former inhabitants having dispersed into the neighbouring districts. This dispersion took place about the year 1824. The Royal road to San Fernando crosses the Guaracara, about half a mile from its mouth, over a fine bridge of wood lately erected. The district of Pointe-à-Pierre constitutes the catholic parish of the same name, and the parish of St. Peter attached to the church of England.

North Naparima.—This section is bounded on the N. by the Guaracara; on the S. by the South Naparima eastern road; on the W. by the gulf; and on the E. by Savannah Grande: it comprises the only ward of North Naparima. This ward presents everywhere an undulating surface, and is traversed from the Naparima mountain to Savannah Grande, in an easterly direction, by a ridge which declines towards the Cipero on the S., and towards the Guaracara on the N.—the Tarouba, however, intervening: it is therefore easy to trace the connection of the Naparima mountain with the central range. The soil of this district is in general clayey, of a good quality, and usually of a black colour towards the Cipero; whilst towards the Guaracara, it is of a dark brown appearance, and less productive: though on the whole of a retentive nature, it is generally considered as very good. In some spots the land seems to be superposed by loamy layers, and after heavy showers or continued rain, it is not rare to see patches of the upper layer from two to three feet in thickness and several yards in extent, slide down the flanks of the undulations with the canes they support. Several fine sugar estates appear in this section, some manufacturing from 400 to 600 hogsheads of sugar. A few mills only are worked with mules, one of which, however, made in the year 1854 as many as 340 hogsheads of 38 inches truss, which may be regarded as an extraordinary feat in the annals of cattle mills. The rivers Guaracara and Tarouba, with the St. John's ravine,

drain the northern division of this section, and the Cipero its southern portion. Very little or no cacao is cultivated in this district, and but few ground provisions raised: a little coffee only is grown near San Fernando.

The Naparima mountain or hill is nearly insulated, of a conical shape, and, though only 670 feet high, remarkably conspicuous: it is entirely formed, according to all probabilities, of silicate of alumina, covered with a fine vegetable mould, and is cultivated almost to the summit on the eastern side. At its foot stands San Fernando, the chief town of the southern division of the island. It is built in a sort of small recess, formed by two spurs stretching from the mountain towards the sea. Two small ravines flowing down the hill, traverse the upper part of the town, and soon after unite in one stream; the ground previously rising rather abruptly towards each arm. This space is scantily dotted with a few houses, except, however, along the principal street, which leads from the wharf to the S. side of the mountain, following the left or southern spur; it has a rather winding direction, whilst some of the other streets are straight, and intersect at nearly right angles, though several are very narrow. To the southward is a high ground upon which stand the Roman Catholic church, the hospital, the town hall, and the barracks: an alley planted with trees forms a promenade around. This part is the most pleasant section of the town, as it commands an extensive view of the gulf and the adjacent country. The promenade was projected by Lord Harris, and bears his name. On the sea-board, near the wharf, is a small square, used as a landing-place and a market. A pier, strong, and durably constructed of hard-wood, with a flooring of carapa and cedar planks, has just been completed for the convenience of passengers and the reception of light freight: it is 300 feet long. The houses are of one or two storeys high, few being substantially built, although the greater number are of hard-wood. House rent is much dearer in San Fernando than in Port-of-Spain: there were on the 1st of July, 1851, 637 houses, representing a revenue of £13,222 sterling. Though the soil is of a retentive nature, San Fernando is nevertheless easily drained, on account of the peculiar disposition of the ground: the ravines, also, which traverse it from east to west, by proper precautions, and gradual improvements, may be made useful sewers; whereas if due attention be not paid to their banking and cleansing, they will be to San Fernando what the

Dry River is to Port-of-Spain—an intolerable nuisance. The soil is strongly impregnated with bitumen, which oozes out in several places, and forms between St. James' and San Fernando streets, a small pond. The bituminous nature of the substratum prevents the sinking of wells, since the water becomes so strongly impregnated with bitumen as to be unfit for use: rain water preserved in tanks or wood, forms the chief supply of the inhabitants. Fresh water, however, filters out all around the basis of the hill, and is collected in a few wells; but it is to be apprehended that in proportion as cultivation extends over the flanks of the hill and towards its summit, and also as the rank vegetation is destroyed, the supply of water will greatly diminish, or may even cease altogether. This is a subject fully worth the attention of the Town Council. The government has lately offered a sum of £2,500 to any individual or company that would bring water to the surface by the sinking of artesian wells.

San Fernando is about thirty-two miles south of Port-of-Spain: a daily communication, excepting Sundays, is established between both towns by means of a small steamer; the passage is three hours, the cabin fare 1 dollar, and 50 cents for steerage passengers. The sea is very shallow off the town of San Fernando, as also along the neighbouring coast, and vessels cannot anchor within two or two and a-half miles of the shore. San Fernando was founded as early as the commencement of 1786, but has only lately obtained the municipal privileges of a council and mayor. Population in 1851, 2,837 inhabitants—males, 1,348; females, 1,489. Religious sections—Church of England, 727; Catholics, 1,775. It forms the parish of St. Paul, Church of England; and of Naparima, Church of Rome. It contains also a Presbyterian and a Methodist chapel. There are two suburbs attached to the town—the *Café* on the N. Naparima eastern road, and Bushy Park, on the S. Naparima eastern road.

From San Fernando, three royal roads respectively lead—northward, to Pointe-à-Pierre; southward, to Mosquito creek; and eastward, to Savannah Grande. From these main roads branch off several ward roads, leading to the east and south-east, and affording means of communication between the estates and the landing-places: one of the branches—the S. Naparima eastern road—marks the limit between the districts of N. and S. Naparima.

South Naparima.—This section is divided into two wards, viz., South Naparima eastern and western wards. It is bounded on the N., by the district of N. Naparima; on the S., by the Oropuche lagoon; on the E., by Savannah Grande; on the W., by the gulf. It is gently undulating, and the whole of it may be said to be under cane cultivation. If not the largest, at least the best sugar estates of the colony are in this section. Very little cacao is grown, and few ground provisions are raised, though maize, rice, and edible roots, such as yams and tanias, thrive remarkably well. The soil of this district may be classed under three heads—black, or *figuier* soil; dark brown, or *zapatero;* and white. The black soil is called *figuier*, on account of the great quantity of the *figuiers* or wild fig-trees which grow therein, and the dark brown, *zapatero*, because the *zapatero* tree is there found in great abundance. The *figuier* soil is of the very best description, and of inexhaustible fertility: it extends in the form of a zone or belt, from the sea board and the lagoon, along the river Cipero, towards Savannah Grande; it varies in breadth from three to four miles. Not only do canes ratoon in this soil for many years, but it does not seem to be very favourable to the growth of rank weeds; from two to three annual weedings only are required to keep the cane-fields clean and in good condition. The canes generally do not grow to a very large size, but from twenty to thirty shoot from the same stool, and the richness of the juice varies from 15 to 22 per cent. of sugar. The *zapatero* soil is also excellent, although not of the same extreme fertility. The white soil of Naparima forms, in a manner, the substratum of the whole district; it is a magnesian marl. Wherever it predominates, the canes are liable to wither from drought during the dry season, but they grow and thrive well during rainy weather. The principal defect of this soil seems to result from its colour, which opposes the free absorption of heat, whilst its power of reflection acts injuriously on the foliage of the cane. Stable manure is the best corrective of this defect. That the magnesian marl forms the substratum of a large tract, becomes apparent wherever the superstratum has been removed by one cause or another, and patches of it are also met with both in the black and brown soil.

There are more cattle mills in this district than in any other of the island; and the proprietors are so well satisfied with the results that they do not think of making a change to steam-engines.

The river Cipero, which may be taken as the natural limit between N. and S. Naparima, is a small stream formed by the accumulation of the waters that collect in the depressions of the undulating land on both sides; its bed is deep and the bottom muddy, and it contains little water till within about a mile and a third of its mouth, where it becomes navigable for canoes and flats at high water. It has its outlet a little southward of San Fernando. The *embarcadere*, or shipping place, is at the extreme of the above navigable distance, with storehouses for receiving the sugars in readiness for shipment from many estates in the interior. There are, besides this, two other shipping places which can also be approached at high tide, viz., Ally's creek, on the Bel-air estate, at the mouth of a small ravine; and Mosquito creek, at the northern entrance of the Oropuche lagoon. This lagoon—known also by the name of the Great Lagoon—may be considered, as I have already stated, as the main draining reservoir of the western division of the southern basin. Many small streams bring down from the adjoining districts, the tribute of their waters to the lagoon: part of these flow from the hills in the neighbourhood of Savannah Grande, and part from the district of Siparia and the southern range. The lagoon is nearly twelve miles in length, and from a half to three and even four miles in breadth. Its ground surface swells up at intervals into mounds, which form so many islets, with which the lagoon is literally studded. These mounds are covered with a rich vegetation; the largest among them are cultivated in provisions, and one of the latter even in cotton. They are separated by natural canals, and a labyrinth of ponds covered with rushes, reeds, and other aquatic plants; four or five larger channels meander amidst this intrication of islets and ponds, serving as outlets to the waters which accumulate in the lagoon. Near the sea-board, as also in the interior generally, mangroves grow in great abundance. The land adjoining the lagoon, and such parts of it as remain uncovered at low tide, are of the same black colour as the *figuier* soil of S. Naparima; and it is probable that, in the course of years, and by the slow but regular process of natural agencies, fresh alluvia will be gradually added to those already deposited, and new land be formed—whilst the waters will collect into some main channel, and form a river of considerable size.

Three principal outlets carry off the waters of the lagoon to

the sea, viz., Mosquito creek, or Blazini's river, on the Naparima side; Godineau's river, on the Oropuche side—by far the most important; and, nearly in the centre, another one which has hitherto received no designation, but to which I would give the name of Mr. Devenish, the surveyor who carried the road across the lagoon. Mr. Godineau was a French colonist who had formed a settlement at Oropuche, immediately adjoining the lagoon. He first opened a canal by which to transport his canes to the mill in punts, and afterwards cut through a small neck of land, which acted as an embankment, in order to procure a water communication to the sea, and a freer discharge of the contents of the lagoon. This opening now forms the Godineau river, a powerful stream of 120 feet in breadth, and capable of bearing the heaviest-laden flat for a considerable distance into the interior. The enterprising Frenchman was unfortunately ruined in an undertaking too arduous for his resources, but which, under favourable auspices, might have terminated successfully, and which would undoubtedly have proved of incalculable benefit to the surrounding districts, not only as conducing to their salubrity, but in regard to facility of transport and other advantages.

In the year 1852, a corduroy-road was laid out across the lagoon, closely parallel with the sea-shore. It is two miles long, and cost the sum of £1,855 sterling. Two bridges have been thrown over the Blazini and Godineau rivers, and many culverts along the whole line; and yet, notwithstanding the above considerable outlay, and its evident accommodation as a thoroughfare, it is now proposed by some would-be economists, to abandon a road which establishes a land communication between the Naparimas, Oropuche, La Brea, Guapo, and Cedros.

The lagoon is frequented, at certain seasons, by an enormous quantity of water-game, viz., by white and gray herons, crimson spatulas, red flamingos, teals, ducks, water-fowls, &c. The mangrove ramiers and flocks of parrots resort to the islets and the mangroves as their place of roost; and at such times the chattering of the latter is absolutely deafening. It is also inhabited by alligators; and large oysters are found in some of the channels, or sticking to the roots of the mangrove trees.

The Oropuche lagoon is an inexhaustable source of malaria, which spreads over the neighbouring districts and renders them very unhealthy, particularly that part of the ward of Oropuche

which stretches along the coast. Remittent and intermittent fevers are permanently endemic in those localities.

Savannah Grande.—To the eastward of North and South Naparima is the district of Savannah Grande, divided into two wards. It is bounded on the west by the Naparimas, and on all other sides by crown lands. The land, in this district, is highly undulating, rising into hillocks near the Mission, and bordering on the Montserrat hills. The Mission and the settlements around extend over the table land which stretches to the south-east, and skirting the head of the lagoon, join the southern range, so as, in a manner, to form a dividing ridge between the Guataro river and the lagoon of Oropuche. This section is generally fertile, and tracts of it may be compared with the best Naparima soils; in fact, the zone of the *figuier* soil may be traced to some of the sugar estates of this district, which are considered as equal to any in the colony. It is in general, however, a dark clay loam. In several places are found beds of tuffa, containing hard nodules, with infusoria and bivalve shells. In the eastern ward are the mud volcanoes, which I have already noticed. Sugar and provisions are its principal productions, and a little cacao is also cultivated. The majority of the sugar estates are furnished with steam-engines.

There are in this district, besides the village of the Mission, inhabited by a few individuals of Indian and other descent, two settlements, formed about the year 1817, by the location of a few hundred American blacks or coloured people, captured during the last war, and brought to Trinidad by Admiral Sir A. J. Cochrane. A few acres of land were allotted to each individual, in fee, on payment of a quit rent. In the year 1848, these allotments were surveyed, and each settler was granted six acres of land in full property, subject to the ward rates. These settlements, I must confess, have not answered the object for which they were intended; and to the American settlers may be addressed the same reproach which I have attached to the disbanded soldiers located at Manzanilla and Tururе. They cultivate some provisions, it is true, and occasionally employ themselves as jobbers on estates, mainly as axe-men, cane-cutters, and trenchers, but their principal occupation is the chase, their hunting-ground extending from Tamana to Moruga, and from the Mission to Mayaro. They generally belong to the Baptist persuasion. Savannah Grande forms the parish of St. Stephen of the Church

of England, and the Catholic parish of Savannah Grande. There are also two chapels of the Baptist persuasion.

Savannah Grande communicates with San Fernando by means of a high-road which follows the windings of the ridge extending from the Naparima mountains to the Mission. It is seven miles long, without a bridge, and the same ridge continues to run nearly due east for ten miles further, without a gap or ravine. A tract or path, through the virgin forest, leads southward to Moruga, and another one eastward from Monkeytown to Mayaro.

The county of Victoria, though second in population to that of St. George, may be regarded as the most important in an agricultural point of view. Its surface is uniformly undulating, gradually rising from the sea-shore, southward of San Fernando, and from the lagoon in an E.N.E. direction for about sixteen miles, with a few hillocks here and there above the general level of the country. Every ridge sends its streamlets down hill to the right and left, and small brooks or ravines collect the diminutive tributaries from every depression or valley. On the N., the water-courses bend towards the valley of the Guaracara; on the S.S.E., towards the lagoon, and contribute to the formation of the Cipero in the centre. There is no morass or pond of stagnant water in the county. Those parts which are not under cultivation abound in cedars, robles, savonettas, &c., and the carat-palm, for thatching; there is also a great abundance of cabbage-palms. Many are preserved in the cane-pieces, sending forth their column-like stems, surmounted by a crest of undulating foliage.

With fortunately but few exceptions, the soil is excellent throughout the whole extent of the county, and is well suited to the growth of almost every product—provisions, cacao, and sugar; but it seems particularly well adapted to the production of the latter article. If it be ever granted to Trinidad to extend its cane cultivation, new sugar estates will decidedly be established in the county of Victoria. It is really surprising how little care the culture of the cane requires in virgin land recently cleared. A plant negligently laid in the soil will grow luxuriantly, and send forth from twenty to thirty offshoots; and but two or three weedings are required before it is fit for the mill. The only drawbacks against this district are its proverbially bad roads, the difficulty of making good ones, and of keeping such in proper repair. It becomes sometimes impossible, during the rainy season, to cart

one single *barrel* of flour to any distance; an empty cart, even, cannot force its way through the deep and adhesive mud of most of the roads in wet weather, and it often becomes necessary to pack the flour in small parcels of forty or fifty pounds, each parcel being then carried by a labourer. It is not unusual to see carts left lying, or rather *sticking* in the mire on the high-road, from the sheer impossibility of taking them back to the estate. This very ground, however, which becomes so soft and adhesive when saturated with water, becomes of a brick-like consistency when exposed for some weeks to the action of the sun and wind, and, by the gradual process of evaporation, breaks into fissures in all directions and becomes almost friable. In consequence of this property in the soil of the Naparimas and Savannah Grande, there are no good pasturages in these districts, so that, in former times, the loss of animals was fearful—nearly twenty per cent annually. It has, however, materially decreased since the planters have adopted the plan of hand-feeding their stock in stables during a part of the day. Nearly the whole tract westward of the Mission is under cultivation. From some of the elevated spots, the aspect of the country is enchanting—all around cane-fields are seen waving under the gentle influence of the breeze, surmounted by their beautiful panicles of flowers, and concealing the saccharine treasures which the industry of man will soon make available for freighting the vessels awaiting in the placid gulf their annual cargo of sweets. Lo! on whatever side the observer turns, the black, curly smoke escaping from the lofty chimney, and carried away by the evening breeze, is an indication that the manufacture of sugar is going on throughout the entire district; and whithersoever he bends his steps the wholesome balsamic odour of new made sugar is wafted in a tide of perfume towards the spectator.

Since emancipation, several villages have been formed in this county, viz., Bambou, or Canaan village, at the head of Ally's creek, and on the South Naparima royal road; Bourg Rambert or Mulatresse, on the South Naparima central road; the village of St. Joseph, on the Point-à-Pierre road; those of St. Magdalen and St. John, in North Naparima; and Monkeytown, in Savannah Grande.

Population in 1851, 15,940—males, 8,899; females, 7,041. Church of England, 5,094; Catholics, 7,512.

County of St. Patrick.—Bounded on the N. by Victoria

county and the Gulf; S., by the sea; E., by a line running from the Guataro, down and along the river Moruga, to the mouth of the latter; W., by the Gulf. This county has been divided into six wards, viz., Oropuche, La Brea and Guapo, Irois, Cedros, Erin, and Moruga.

The ward of Oropuche, which comprises the quarter of Oropuche and the Mission of Siparia, is bounded on the N. by the Gulf; on the S. by Crown lands; on the W. by La Brea, from which it is separated by the river Roussillac; and on the E. by the Lagoon and Crown lands.

The surface of this ward is extremely undulating, rapidly elevating towards the east. In no part of the colony, perhaps, is the quality of the land more variable; veins of the *figuier* soil are met with in tracts of a coarse clay, or of a poor sandy soil. It is, on the whole, more retentive than that of Naparima and Savannah Grande. Towards Siparia, it is a rich light loam, very permeable, and of the best description, being well adapted to the growth of the cane, cacao, plantains, and all sorts of ground provisions; as also of tobacco, which, at the Great Exhibition, was considered equal to the best Havanna. The principal productions are, in Oropuche, sugar and provisions; in Siparia, a little cacao and tobacco, with provisions. The cane cultivation extends towards the sea-shore, from Godineau's river to the Aripero, and not farther than two miles inland. There were formerly ten sugar estates in Oropuche: there exist at present only six, of which but one is furnished with steam-power—the Otaheiti—which has also a tram-road leading from the works to the shipping-place. Besides Godineau's river, the ward of Oropuche is drained by the Tarouba, the Aripero, or Silver-stream, and the Roussillac, which receives the waters of a considerable hollow or depression, known as the Roussillac swamp, between Oropuche and La Brea. The Aripero is a tidal stream, and admits of the entrance of flats to unload estates' supplies and take off produce. Between the Godineau and Roussillac rivers lies a shallow bank, formed by the washings of the various water-courses above-mentioned. At the fall of the spring-tide, this bank extends upwards of a mile out to sea, impeding the approach of the smallest boat. The Rio Negro and the Perro discharge their waters into the lagoon; as also the San Francisco, which establishes a communication between the Great lagoon and a smaller one called Bertrand's lagoon: they flow from S.S.E.

The quarter of Oropuche is very unhealthy, not only on account of its proximity to the lagoon, but also in consequence of the prevalence of mangrove swamps all along the line of coast.

The village of St. Mary stands on a small natural savannah, very much resembling that of Piarco, at Arauca, between the Belle-vue and the Otaheiti estates, about a mile from Godineau's river, and a mile and a half from the bay. It is well laid out, but miserably built. Two small churches have been erected there since emancipation, viz., the Anglican church of St. Matthew, and the Catholic church of Oropuche. Besides this village there are numerous isolated settlements, viz., at Freeman's bay, the public landing-place, the Yarraba village, the Krooman village, the Avoca, and the Bois-macaque settlements. In all these nooks and corners are herded together large bands of immigrants, imported into the colony, particularly Congoes and Kroomen. In fact, the population of Oropuche may be characterised as a heterogeneous collection of the inhabitants of different countries, in an unsettled and migratory state: Congoes, Yarrabas, and Kroomen, from Africa; Coolies and Chinese, from Asia; Americans, from the United States; Spaniards, from the neighbouring continent; emigrants from the British and French colonies, with a limited number of natives of Trinidad; these compose the mass of this motley assemblage. Scattered far and wide, throughout the vast extent of this district, removed from the influence of civilising institutions, and left to the unfettered indulgence of a disorganised and half-savage life, moral depravity and ignorance of all social responsibility form their chief characteristics. Bound together by the ties of nationality or tribeship, they have generally banded in distinct settlements, where nought is to be found beyond the primary elements of social aggregation. Many of them are squatters, regarding with suspicion, and as intruders, those who enter their settlements. They have already, on more than one occasion, behaved riotously, and resisted the agents of the government; and unless stringent, but at the same time prudent, regulations be adopted and enforced, it is to be apprehended that, instead of improving, matters will become still worse.

The mission of Siparia is situated on a table-land, about seven miles and a half from St. Mary's village, with a descending slope of about 150 feet on almost all sides. The base of this plateau is washed, on the westward, by the river Perro. The fertility of the soil in that locality, its abundant natural resources, and the beauty

of the scenery, had attracted the attention of Sir Ralph Woodford, who originally organised the mission by locating thereon the royalist emigrants from the Spanish colonies of South America. After the war of independence, its population received new accessions, and finally rose to nearly 500 souls. They had then a resident *padre*, or priest, a corregidor, and a schoolmaster. The present state of the mission is far from affording the same pleasant aspect, its population being reduced, cultivation neglected, no school, no resident priest; so that Siparia is fast being abandoned: and yet the cane, cacao, plantains, corn, and all the vegetable esculents common to the island, grow there to an extraordinary size, and with a luxuriancy which is not equalled anywhere else in the colony. The retired position of Siparia, and its want of communication with some part of the coast, is the great obstacle to the progress of that district. A bridle-path leads to Oropuche through the forest, and mere tracts northward to Naparima, and southward to Moruga. They are practicable during the dry season only. Siparia, from its elevation and inland position, is cool and remarkably healthy.

The ward of La Brea, which comprises the quarters of La Brea and Guapo, is bounded on the N. by the gulf; on the S., by Crown lands; on the E., by Oropuche; on the W., by Irois. The surface of this ward bears some resemblance to that of Oropuche, undulating towards the coast, and swelling into elevations towards the interior. From point La Brea eastward, the ground rises into a sort of dividing range, expanding towards Oropuche on the E., and towards Guapo on the W. The waters thus separated contribute to form, on the N.N.E., the Roussillac, and on the W.S.W. the Vessini or Bravo river. In the vicinity of the Rousillac exists an extensive marshy plain or hollow, which, in the wet season, becomes flooded to the depth of nearly four feet, and the whole line of coast extending between the mouth of the Roussillac and point La Brea is thickly studded with mangroves. The soil, in general, is not of good quality, being an admixture of a reddish retentive clay, or unproductive sand, with asphaltum, very poor in organic matters, and therefore easily exhausted. It improves towards the interior; but even there the abundance of *timites* shows that it is still rather infertile. Canes and provisions form the basis of the cultivation of the latter portion, but manioc and corn are, in general, the principal growths, the soil not being rich enough for cacao and plantains. La Brea is distinguished for its fine and

delicious pine apples. The quarter, unfortunately, is rapidly on the decline. It possessed at one time seven sugar estates; there now remains but one in full cultivation. Guapo very much resembles La Brea; the soil, however, may be rated as of better quality, particularly on the slopes towards the rivers. Besides the Vessini and Guapo rivers—both tidal streams—there are two or three smaller currents; and the whole line of the Guapo coast is bounded by high lands, with depressions here and there, which are so many outlets to the rivers and brooks. Once a flourishing district, Guapo boasted of its eleven sugar estates, all under the administration of their resident proprietors. But one is now to be found in a cultivated state, the others having been abandoned, some previous to, others since, emancipation. The inhabitants of this ward are generally poor, but peaceable and moral. The population of La Brea, sickly; that of Guapo, more healthy.

The quarter of La Brea, owing its name to the great quantity of bitumen, or pitch—Spanish, *brea;* French, *brai*—which is found everywhere in this district, and forms the Pitch lake, is, on this account, one of the most interesting spots in the island. Every stranger who can spare a few days in Trinidad will do well to pay a short visit to this great natural curiosity of the country. A steamer, which plies between Port-of-Spain and San Fernando, touches twice a-week at La Brea, viz., every Wednesday and Saturday. On Saturday the steamer proceeds as far as Cedros, after touching at La Brea, so that there is sufficient time to visit the lake during the interval of its return. On Wednesdays the steamer stops at La Brea, and an opportunity is then afforded the visitor of inspecting the lake, and returning to San Fernando at night, in order to be ready for a return passage by the steamer next day: or again, he might leave Port-of-Spain on Tuesday evening, sleep at San Fernando, and start early on Wednesday morning for the lake in a boat, so as to catch the returning steamer in the evening. The early morning is the best time for visiting the lake.

The lake and its scenery have already been described by so many persons, that it would be a work of supererogation to enter into many details here; I shall, therefore, limit myself to offering only a few remarks. The Pitch lake, or great bitumen deposit of Trinidad, is situated at Pointe La Brea, on an elevation at about one mile from the sea. The road to the lake is the ward-road of the quarter. This deposit covers an area of nearly one hundred

acres, and its appearance is that of a dull, still, dark waste—*atra regna.* It is irregularly circular and its surface perceptibly convex, being more elevated in the centre, and thence insensibly declining on all sides. In the centre also the bitumen is quite soft, in fact, semi-liquid; but it becomes more and more hardened as it approaches the circumference. Excepting the soft central parts, the surface is intersected in all directions by numerous fissures or chasms, varying in breadth from two to sixteen feet, and from half-a-foot to seven feet in depth, widening also at the surface and terminating acutely at the bottom; thus producing, as it were, inverted angular hollows, while the sides are regularly rounded. These crevices are, at all times, filled with fresh water. Here and there, where the bitumen is mixed with earthy matters, grow lichens and mosses with a few coarse grasses, whilst stunted icacos, sour-sop trees, &c., and caratas, form insulated clusters—oases, in a manner—surrounded on all sides by water.

The centre of the lake—the pitch-pot, or *chaudière*, as it is called—is, at all times, so soft that it would be impossible to venture on it without incurring the danger of being engulfed; there a slow and constant bubbling and puffing is perceptible, accompanied by emissions of gaseous substances and the throwing up of a yellowish mud, quite cold and of an acrid saltness. Over the entire extent the degree of hardness varies with the intensity of the solar rays; at early morn the whole surface, excepting the centre, is hard, whilst, at mid-day, it becomes so softened as to retain the impression of the lightest impress. Whenever any quantity of bitumen has been dug and taken up from the lake, the excavation soon fills up, and a perfect level is restored within twenty-four or forty-eight hours; the deeper the digging, the quicker the restoration. In the centre entire trees are sometimes seen emerging to the surface, to be re-submerged soon afterwards by a slow rotatory movement. Casks placed near that spot to receive bitumen, have also disappeared; and it is reported that strayed animals, venturing too far, have likewise been swallowed up in this vortex. It is evident from the above observations that the operation going on in the Pitch lake may be compared to the ebullition of a thick substance in a large boiler. The asphaltum is thrown up by the active operation of a physical cause constantly at work, and its upward motion prompted by the laws of hydrostatics; there is also a perceptible sort of regurgitating process.

The semi-fluid asphaltum not being cast up by any violent agency partly spreads around, and partly returns to the mass. Any quantity of it, however, which has been left exposed to the action of the sun, is soon deprived, by evaporation, of its moisture and petroleum, and then becomes hardened; the solidity increases gradually, and, by loss from evaporation, the volume of the substance diminishes, the surface cracks, and crevices are formed by a regular retraction as is the case with clay-soils. It is highly probable that the superficies or superstratum only is of this hardened consistency, and that, at a less or greater depth, the bitumen is still soft, or semi-liquid. Neither do I admit the supposition of a subterranean volcanic action; for, bitumen, or asphaltum, belongs to the carboniferous formation, therefore its production cannot be different from that of coal and lignite.

The Pitch lake is not the only spot where bitumen exists. Besides Savanetta and Naparima already mentioned, it abounds in Oropuche and throughout the quarters of La Brea and Guapo, where springs of semi-liquid bitumen, or mineral tar, are met with in several places; there are also, at times, regular eruptions of it in the gulf opposite the Guapo shore, and in the bay of Mayaro on the eastern coast. *Lagon Bouff*, at Guayaguayare, is another of these asphaltum craters. I have no doubt that this substance is disseminated in seams or veins throughout the whole southern division, and that it has a communication with the deposit of "El buen Pastor," in the canton of Maturin, on the opposite continent. Now, what is the origin of the asphaltic deposits of Trinidad? Undoubtedly the same as that of coal and peat.

The Pitch lake, however, ought not to be regarded solely as a curiosity; it may turn out a permanent source of profit to the island. Quantities of bitumen are prepared for local applications, viz., for flooring stores, which purpose it answers admirably; also by its admixture with lime and gravel, bricks and slabs are made, which may be used in building. A small portion of King-street —comprised between Henry and Frederick streets—has been *pitched*, and that kind of floor-pavement has proved very durable. Mixed with wood, or mogass, it has served very well as fuel; and from it also may be distilled petroleum, which is regarded as preferable to tallow in the *lubrifaction* of machinery. Several cargoes of the native pitch of Trinidad have been shipped to Europe; but the samples exported were not, it seems, of the best

description, as they contained a large proportion of earthy substances. The best sample was found to contain from thirty to thirty-five per cent. of earthy and saline matters, and from fifteen to twenty per cent. of water, leaving on an average fifty per cent. of pure bitumen. I have no doubt, however, that bitumen taken from the centre of the lake would be found to contain a far less proportion of extraneous matters. It is evident from the above analysis that the Trinidad bitumen ought to undergo some preparation before being shipped, so as to deprive it, as far as possible, of its foreign and accidental constituents. Petroleum should be extracted on the spot, and the residue made a distinct export. Captain Cochrane has already succeeded in turning the Trinidad bitumen to account in useful appliances; and its conversion into fuel, under his patent, indefinitely widens the prospects of its application; whilst its adaptability to many objects of large consumption leads us into speculations as to its value as a natural resource. A small establishment has been erected on the lake itself, and another in Port-of-Spain, for the preparation of bitumen.

The Ward of Irois.—This ward bears, in point of soil and general aspect, the closest resemblance to that of La Brea; it is highly undulating, particularly towards the interior; the soil is deep but poor, being light and sandy generally, and, in some places, of a gray and reddish colour. Nearly the whole of this ward is crown property, and scanty crops of ground provisions only are cultivated by a few scattered settlers; it nevertheless once boasted of its sugar estates, among which La Paix was the largest and most productive. An extensive forest of mora trees lines the course of the river Irois, and probably spreads out in the interior to a very great distance; there are besides a few locust, carapa, guatecare, and olivier trees. This forest of moras had attracted the notice of Sir Ralph Woodford; it was, however, eventually lost sight of, and may be said, in some measure, to have been discovered anew by Mr. Wm. Purdie, the government botanist. His Excellency, Rear-Admiral Elliot, has now decided on taking advantage of this natural wood-yard, and turning the mora, and other timbers, to useful purposes. A penal depôt has been formed on the right bank of the river, on an elevation at a few yards' distance from the sea; it is capable of receiving convicts, and is a cleanly and well-ordered establishment. The labour exacted from the convicts is that of felling and preparing the

timber for water-transport to the capital. The mora is a social plant, and grows in immense quantities on the same spot, whilst the young plants are as thickly set under the grown up trees as in a well-supplied nursery. The trees are felled and cut into logs, the largest sized being squared on the spot; they are then formed into rafts and floated to Port-of-Spain, a distance of forty miles. A saw-mill has lately been established on the sea-board of the town, with apparatuses for planing, grooving, tonguing, and morticing—the latter not yet in operation.

It seems that the mill was originally intended to have been erected on or near the forest ground; and this, at first sight, might appear the most obvious as well as feasible plan; but the only advantage obtainable by this position would have been that the timber could have been sawn on the spot into scantling planks or boards, and conveyed to Port-of-Spain by means of *droghers*, or coasters, instead of being transported, as at present, in logs of unwieldy bulk, on a raft, or float, of a peculiar construction, and towed by a schooner which is itself laden with the lighter timber. A serious inconvenience would, however, have arisen, in case of accidents, from the remoteness of the works from any forge, or foundry, which could furnish the necessary repairs to the engine and mill-machinery; and even were this objection obviated by attaching one or other of the above departments to the establishment, the additional expense would be in a great measure superfluous, for there are already engaged a superintendent engineer at £500 and an assistant at £250 per annum. Now, were a forge or foundry set up in exclusive connection with the Mora settlement (as must have been the case, since there are no estates adjoining, from which an extra supply of work could be procured), a smith, or founder, with at least *one* assistant, must have been engaged at fixed salaries. But it is not to be supposed that newly erected machinery would furnish constant, or even average employment, to two artisans throughout the year, and consequently, the local scheme, as already shown, would not only have been a disadvantageous but a losing speculation.

I know not whether these drawbacks were taken into consideration at the time, but I have heard that one of the principal motives influencing the fixture at Port-of-Spain was the positive refusal of the chief engineer to reside at Irois. This objection, however, standing alone, would appear rather futile.

Again, though any parties may be supplied at pleasure with wrought lumber from the mill, there are individuals purchasing American lumber in town (pitch or white pine) who would, of course, arrange for its being rapidly wrought up by machinery—planed, grooved, and tongued, or morticed—to an exact scale, rather than wait the tedious process of manual preparation by tradesmen, but who could not avail themselves of the facilities afforded by the saw-mill if it were at Irois.

To the above reasons in favour of its location in Port-of-Spain may be added the facilities afforded to European and American vessels in the harbour, for procuring timber, hard-wood planking, or boards, on needful occasions and at the shortest notice. These may enter the gulf in partial disrepair from rough weather outside, or, in fitting out for their homeward voyage, may require some extra wood-work; and where could they be more speedily or cheaply supplied than at the government saw-mill? A case in point has recently shown the pertinence of my observation. An American vessel was lately delayed in sailing, through the almost indispensable want of a four-inch hard-wood plank. Some months previous, this could only have been procured from the interior, after much loss of time, and at an exorbitant charge. But, in this instance, application being made at the mill, a plank was prepared to order and ready for delivery in a few hours. But the question is this,—Will the undertaking pay, or even be self-supporting? I should regard it as a practical step in the right direction, and as a triumph to the colony, should it prove the latter and be able to supply hard-wood lumber at a moderate price; not only because it would relieve the colony from an annual tribute paid to the United States, but the materials would be far more durable. This ward is watered by several small streams, and amongst them the Capdeville, which is the largest, the Irois, and Cimetierre, all taking their rise in the high lands, and pursuing a northerly course.

Ward of Cedros.—This ward is bounded on the N., S., and W. by the sea; on the E., by the ward of Irois, and may be said to occupy the whole of the south-western peninsula of the island. It comprises the three quarters of Cedros to the north, Quemada to the south, and Icacos to the west. In general features and disposition this ward is nearly similar to the preceding, except in possessing the advantage of greater fertility. The land

is chiefly elevated and waving, and the surface rather broken, particularly towards Point Cedros and the interior, but it becomes more uniform as the quarter of Icacos is approached; the latter is a dead level. The soil is everywhere deep but light, and poor in organic matters; Quemada is, however, very fertile, its soil being in certain spots somewhat similar to the black soil of Naparima. L'Envieuse and the Columbia estates are considered as equal to any in the colony; and Lochmaben, in Cedros, is also an excellent property. The soil of Icacos is a light sandy loam, containing a very large admixture of organic debris; it is of extreme fertility, but vegetation suffers to a dreadful extent whenever any drought prevails. However, all sorts of ground-provisions thrive admirably, especially those of the root kind—manioc in particular; the coco-palm grows beautifully, and yields large crops; it might be cultivated extensively, and, no doubt, with great profit. The whole of Icacos might also form an excellent sheep-run, or be converted into a *hato*, or stock-farm, though still continued in cultivation as a coco-walk, or plantation. In case coco-trees should not be preferred, it would then become necessary to plant trees for the benefit of shade; the *saman* would very likely thrive in this locality, and afford protection to animals against the sun, as well as to herbage-vegetation against the blighting winds. Icacos is obliquely traversed from E.S.E. to W.N.W. by several lagoons, which would supply water for the animals at graze; these lagoons might also be partially drained and turned into rich meadow lands; one of them, the largest, opens into the sea to the leeward of Los Gallos, and is known by the name of Los Gallos lagoon. A natural savannah stretches between two of these lagoons.

On the L'Envieuse estate there is a pitch or bitumen crater; and I have observed in the pasture several blocks of fine sandstone protruding in several places from the soil. On the Columbia estate are to be seen the mud volcanoes I have already mentioned. They are on an elevated spot, in all probability raised by the gradual agency of the self-same volcanoes. The area is very limited, and within it, here and there, small conical mounds are formed, from the centre of which oozes or bubbles forth, a grayish mud; it is quite salt, and spreads around in a thin layer, which is traversed in all directions by irregular cracks. It is said that there are, at certain periods, regular eruptions of this mud; but

I could see no symptoms of this, and the ground bordering the base of the mounds can be trodden with perfect safety.

The ward of Cedros is nearly all private property; the cane, provisions, and coco-nut trees are the only cultivations. There are at present ten sugar estates in full culture, four of which are wrought by steam. At Point Icacos is a coco-walk of from 3,000 to 3,500 trees in full bearing. There is no river in this ward; but fresh water is easily procurable by the sinking of wells, even to the high-water mark. Besides the lagoons at Icacos, several others of diminutive dimensions are met with at different places, some of which might be easily drained, and the salubrity of the district thereby improved. The sea is shallow all along the coast, except round the Point of Icacos, where the water is sufficiently bold to afford anchorage to a large vessel, within hail of the shore. This, however, by no means renders it a safe harbourage, owing to the existence of very strong currents. A heavy surf breaks from Point Cedros to Los Gallos, during the prevalence of the northerly winds, rendering landing rather difficult, and menacing at any moment the drifting of the craft.

There is at Cedros but one village, which is situated near the shore, between the Perseverance and Lochmaben Estates, though a few scattered houses at Grande Ville, and on the lands of the St. Mary Estate, are honoured—I must say most undeservedly—with the name of villages. An Anglican chapel has been built near the latter village, and a Catholic church on the lands of Lochmaben. The wards of Irois and Cedros form the Anglican parish of Christ church and the Catholic parish of Cedros.

A steam communication exists between Cedros and Port-of-Spain, the steamer leaving town every Saturday morning at 7 o'clock; it touches on the way at Couva, Naparima, La Brea, and Irois, arrives at Cedros about 2 P.M., and leaves at 3 for Port-of-Spain, where it arrives at about 9 in the evening. There is also a land communication, partly along the beach, and partly through the forest, over some of the points which project into the sea; this road is a mere bridle-path, and the traveller must always time his journey with the ebb of the tide, unless he should prefer being exposed to be drenched by the waves at its flow, or even prevented altogether from proceeding.

Wards of Erin and Moruga.—These two districts trend along the sea-shore, Erin being bounded on the W. by Cedros, on the

E. by Moruga, on the N. by Guapo and Irois; Moruga, on the W. by Erin, on the E. and N. by undefined crown lands, and both wards, on the S., by the sea. The surface of these two wards is highly undulating, particularly towards the interior. The soil in Erin is generally light, and in some parts of excellent quality; in Moruga it is of a more clayey nature, but of the best description. Erin was once pretty well cultivated, but its population has of late been gradually diminishing, owing mainly to the want of facility for communication.

Sugar, cacao, coffee, and provisions, were the principal productions; and the Erin coffee is still regarded as excellent. Several cacao estates are now in an abandoned state, having been sold either for quit-rents or ward-rates; and there is now but one sugar estate under cultivation in Erin—the Chatham, which has very good land. Moruga is still more scantily inhabited, and produces only a little sugar and cacao, with some ground provisions, the whole almost entirely the growth of the Moruga estate, formed on the banks of the river of the same name, by the enterprising and industrious Mr. Henry Lumy.

Colonel Hamilton once attempted, under the government of Sir Ralph Woodford, the establishment of a *hato*, or stock-farm, principally for horned cattle and horses, in the natural savannah of Erin; but it did not succeed, if public rumour is to be believed, owing to the ravages among the animals of ticks and bats: it is, however, highly probable, the concern itself was ill managed.

Between Erin and Moruga, lignite exists in seams, the extent of which has never been ascertained. Report states that chromate of iron has also been found at Point Calfat or Chaguaramas.

Produce is brought to town by *droghers* or *pirogues*, after rounding Point Icacos—a tedious and expensive voyage. A path through the virgin forest leads from Moruga to the mission of Savannah Grande, and another track from Erin to Guapo; the latter is about six miles in length. His Excellency, Admiral Elliot, I have heard, intends to render it practicable for beasts of burden—an invaluable service to the ward of Erin, as its produce might then be conveyed to Guapo, on the gulf, and the now isolated quarter of Erin brought more directly within the range of Port-of-Spain than Cedros.

The above wards abound in excellent timber, particularly in fustic, cedar, and moras. They are drained by several small streams,

and, amongst others, the Erin, La Ceiba, the Taparo, and Moruga; the latter being a tidal river. They have all a southerly course.

The county of St. Patrick consists partly of waving and partly of hilly lands, being traversed from E. to W. by the southern range; the greatest part of it is crown property. Except at Oropuche and Cedros, the population may be said to have decreased since emancipation; nor is it likely to be augmented, owing particularly to the remoteness of its most eligible locations from a market. As regards its soil, it may be divided into two zones: from La Brea to Cedros it is generally a light soil, poor in organic matters, as shown by the extensive *timitales*, or timite groves, abounding in Guapo and Irois; from Moruga to Quemada, along the sea, it is either a light or clayey loam, generally very fertile. This is evidenced by an abundance of a species of palm (*Attalea speciosa*), its prevalence being a symptom of a rich soil; and by the successful cultivation of cacao, and the natural growth of carats and cedars. This county, notwithstanding its position and relative disadvantages, is highly interesting, as being the grand receptacle of our bitumen deposits and lignite formations; and should it turn out that chromate of iron exists to such an extent as to render its smelting advantageous, or should the cultivation of cotton or tobacco ever be extended, then the county of St. Patrick would acquire some importance; for the southern coast is regarded as eminently adapted to the growth of cotton, and the tobacco district of Siparia lies within its limits. However, the great obstacle to improvement is the want of facilities for land communication; there is, in reality, no cart-road in the county; for the road from Oropuche to La Brea becomes impassable, even for horsemen, during the wet season, and that from La Brea to Guapo issues on the river Vessini, which is not fordable for carts. The road from Cedros to Icacos might certainly be improved, but in its present state it is positively dangerous: produce is therefore shipped by means of flats on board of vessels anchored at a distance of two miles off the coast, or placed on board of droghers and carried to town. A few villages have arisen in the county of St. Patrick, viz., at Oropuche, La Brea, Guapo, and Cedros; the missions of Siparia and Erin have only a nominal existence.

Population in 1851:—4,574 inhabitants. Males, 2,679; females, 1,895. Church of England, 915; Catholics, 3,224.

County of Mayaro.—Bounded on the N. by the river Guataro,

on the S. and E. by the sea, on the W. by the county of St. Patrick. It comprises only one ward, that of Mayaro, which consists of the old quarters of Mayaro and Guayaguayare, extending along the eastern and southern coasts, from Point Mayaro to Point Casa-Cruz. Only a part of this belt is cultivated, and it is very thinly inhabited. Mayaro preserves a level all along the seashore, from Point Mayaro to the Lagon-doux, but runs into waving land towards the interior. The level tract along the beach is a light sandy loam, of excellent quality, compounded largely of organic matters, with a goodly proportion of comminuted marine shells; the undulating region is of a dark clayey loam, resembling the Naparima Sapatero soil. The sugar-cane, rice, plantains, and roots, succeed admirably and yield abundant returns; sweet potatoes, also, and yams are of particularly fine growth, and of excellent quality. The coco-palm thrives better along the Mayaro beach than anywhere else, perhaps, in the colony. Cotton was once extensively cultivated, but the high price of sugar, coupled with the depredations of caterpillars and locusts, induced the proprietors to abandon its cultivation for that of the cane. Six sugar estates were then settled in the quarter. Immediately after emancipation, however, a great number of the emancipated labourers abandoned the cane-fields for other pursuits, and the planters were compelled to make the most urgent sacrifices to procure immigrants. But the difficulties of communication with Port-of-Spain, and the high freight paid for the carriage of produce thither, as well as of articles of food therefrom, influenced, or rather necessitated, the labourers to retire from the quarter; they were, in fact, sometimes left without salt provisions, or even flour, for weeks. The remoteness of Mayaro from a market, therefore, was the chief cause of its utter ruin, all the sugar estates having, in succession, gone out of cultivation. The plantation of coco-palms, however, has extended, and, it is expected, will continue to extend, both to the advantage of the proprietors and the prosperity of the ward.

Cotton and provisions only, as far as I know, have hitherto been cultivated in Guayaguayare. The soil is of excellent quality, being either a rich, clayey, or light loam; and it may be said, that no part of the island has been found better adapted to the growth of corn, plantains, and other articles of food, than this quarter. Guayaguayare, moreover, is well watered, an advantage of which

Mayaro, Nariva, and Manzanilla are deprived. The lower section is highly undulating, and changes to hilly towards the interior. I have already mentioned the two rivers which discharge their waters into the Bay of Guayaguayare, viz., Lizard and Pilot rivers: they are tidal streams, with mangroves at their outlets. A few diminutive brooks course through the undulating ground of Mayaro, and owing to their being regularly dyked by the sand thrown up by the surf, expand at their mouths into small lagoons; of these, only one is worth notice—the Lagon-doux.

I must now say a few words of the Guataro or Ortoire. My information is drawn partly from Captain Columbine's survey, and, otherwise, from reliable private sources. The Guataro has its mouth to the northward of Point Radix; after rounding which point it runs for some miles in the rear of Mayaro, and then takes a W.N.W. direction. Its course winds in the most eccentric manner, particularly towards its mouth, where the country is nearly a plain. Its banks are low, and the bed muddy; but the former rise proportionably with the elevation of the adjacent lands. The Guataro is navigable, for large canoes, eighteen miles. Captain Columbine surveyed it for twelve miles upwards, and, at that distance, found it thirty feet wide, and eighteen deep. It does not seem that the Guataro receives any considerable affluent from the south; the great body of its waters descend from the central range, between Tamana and Montserrat, its tributaries from that direction being the Maïroa, Bell's Creek, the Poui, Cunapure, and Caranache. Moras grow abundantly in the low lands, and, higher up, cedars, robles, and copaiba trees. Should this part of the island ever become settled, a village might be advantageously formed at the head of the river navigation, and a tram-road laid down from that point either to La Brea or to Pointe-à-pierres. Or, again, the produce might be carried down to the landing-place of Mayaro, since a distance of only 1,270 yards, across the Mayaro estate, separates the river Guataro from the beach; a tram-road could then be laid in junction between the river and the sea, thereby avoiding the difficulties of entering the Guataro, and the dangers of a navigation to the northward of Point Radix.

Excepting the belt along the shore, the entire county of Mayaro is crown property; its surface, to all appearance, is undulating, rising into hillocks towards the S. and S.E. It is said to be rugged, and everywhere intersected by deep ravines to

the rearward of Mayaro ward, and also towards the S., the soil in those parts being sandy. Its quality, throughout the county, varies from a rich clayey loam and alluvium to a poor sandy earth, characterised by the growth of the cocorite-palm. Forests of mora and cedar are met with in several places, and the county, generally, abounds in excellent timber.

I have not even a remote idea of the geological formation of the southern range. The nucleus of Point Radix seems to be of sandstone with an admixture of limestone; and the entire promontory represents a rather peculiar disposition, being an insulated headland, bounded on the N. and W. by the river Guataro, whilst the ground is so low, southward, that it cannot be more than thirty or forty feet above the level of the bay, or the river. Point Radix is very rugged, being rent in all directions by ravines, though the soil is a clayey loam of excellent quality. Its connection with the ridge followed by Mr. d'Abadie, in cutting the Mayaro track, can be easily traced. The promontory itself was, in all likelihood, thrown up by some convulsion of nature. The disposition of Point Galeota is nearly similar to that of Point Radix, and its geological formation probably identical. It is in the quarter of Guayaguayare, within the longitude of Casa-Cruz, that the pitch deposits and springs, called "Terre Bouillante," and "Lagon Bouff," are to be found. Population in 1851:—985 souls. Males, 537; females, 448. Church of England, 47; Church of Rome, 902. Mayaro forms the Catholic parish of Mayaro. At Point Radix there is no village, properly so called, but rather a collection of thatched cottages; a similarly rude hamlet is stationed near the church.

County of Nariva.—Bounded on the N. by the county of St. Andrew, on the S. by that of Mayaro, E. by the sea, and on the W. by the county of Victoria. Although one of the most extensive, this county is the least populated, and, consequently, the least cultivated of all the island divisions. The only inhabited part is the *Cocal*, or Coco-walk, a very narrow belt along the sea, planted in coco-palms, and which constitutes the ward of Nariva. The whole of this county is crown property, except the *Cocal*, which belongs to the Borough Council of Port-of-Spain, and nothing is cultivated in the ward but coco-palms and a few provisions. This coco-plantation, extending almost from Lebranche to Guataro, was accidentally formed many years ago. Among

the many traditional accounts of that event, the following bears a very plausible aspect: it is to the effect, that a schooner, laden with coco-nuts, was wrecked on this coast, and the nuts washed ashore by the surf; the locality being favourable, they sprouted, grew up, and spontaneously propagated to a large extent. Whatever be its origin, the Cocal consists of about 10,000 coco-trees, more or less, some of them very old, others quite young, and a great many in full bearing. They may give, on an average, a monthly crop of, say 100,000 nuts, yielding 1,150 gallons of oil per month, or 13,800 gallons per annum. The quantity at present manufactured is 12,000 gallons. The manufactory has been erected about mid-way betwen the rivers Lebranche and Mitan, so that the carriage of nuts, across the Mitan, from near the Guataro, to the establishment, is a tedious affair. It is worked by a steam-engine of six-horse power. The kernel extracted from the shell is bruised by means of grooved rollers, then reduced to a pulp by a mill-stone; the pulp is next placed in double-bottomed pans, heated by steam, which process has for result the evaporation of a certain proportion of water, and a coagulation of the albuminous ingredients of the pulp. The mass is then submitted to the action of an hydraulic press, and the oil allowed to deposit; it is finally drawn off into casks, carted to the landing-place at the mouth of the Lebranche, and put on board of a vessel, anchored under the lee of Point Manzanilla, for transport to Port-of-Spain.

The sea has a tendency to encroach upon the land at the Cocal, whilst the Mitan is gradually encroaching southward to a considerable extent: the destruction of a large number of coco-trees is the result of this counteraction. The plantation, however, may not only be preserved in its actual area, but it might also be extended by steady cultivation, when two establishments might be maintained—one as at present existing, and the other, between the Mitan and the Guataro. The Cocal is leased, for a term of years, at the annual rate of 1,200 dollars.

The county of Nariva may be said to consist altogether of virgin land: it is partly level and swampy, partly undulating and hilly. Both the level and hilly tracts are very imperfectly known, and suppositions only—more or less plausible—can be formed, as to the nature of the country and its geological formation, from incomplete surveys made, at different periods, by Mr. John

Carter—the lessee of the Cocal—and, more recently, by Messrs. Sorzano and d'Abadie.

The swampy part of Nariva presents, from the sea, a striking aspect—it being a perfect level from the beach to the foot of the Lebranche ridge; and, though covered with a luxuriant vegetation, it looks like a still waste, with the mountain-cabbage towering above the tall grasses and the copse-woods around: close to the beach, mangroves and balatas grow in clusters. The vapours which rise early in the morning, forming long hovering streaks of wreathy mist, indicate the *locale* of the swamps which intersect these lowlands in all directions, whilst, in the background, the Lebranche hills seem to emerge abruptly from the plain. In front, the Nariva or Mitan stretches along the beach, immediately beyond the Cocal, for several miles. It is a fine deep sheet of dark water, expanding near its mouth into a sort of basin. The Nariva, as I have already stated, takes a northerly course until it meets the southern spur of the valley of Lebranche, when it turns nearly abruptly southward: it is formed by the accumulation of the waters which descend the Lebranche group, from Morne Calabash to Tamana. They collect first in swamps and canals communicating with each other, ultimately to unite in one stream. There is, besides the Nariva, the *Jean Paul* or *Doublon* river; it owes its existence and names to the following circumstance: Mr. Carter, the lessee of the Cocal, finding that, during the rainy season, the quantity of water received by the Nariva was disproportionately large, came to the determination of opening a new channel for the surplus waters, and made an arrangement with a man of the name of *Jean Paul*, to cut a canal through the sandy beach, for which he paid him a doubloon; hence the names of *Jean Paul* and *Doublon* given to that canal, which may be said to form, at present, a second mouth to the Nariva.

In the year 1849, Messrs. M. Sorzano, surveyor-general, and L. d'Abadie, also a land-surveyor, received instructions from Lord Harris to cut a track from Tamana to the Cocal. They began their survey on the 15th of April, and reached the beach on the 2nd of May. This track is a straight line, its direction being E. ¼ S., and its entire length fourteen miles. For nearly four miles, from Tamana, the country is undulating, the superstratum resting on limestone. The lower portion is

seven miles in length, and varies alternately from gently waving to flat; the last three miles present a marshy plain. In this section, mangroves were observed first, then in succession—a dry savannah, a tract of very rich land, of about one mile and a half in breadth, covered with carats and wild plum-trees—next, an extensive savannah with clusters of the moriche-palm—several mangrove swamps, separated by dry savannahs and belts of dry land—a fine dry savannah, swamps and mangroves—again, a small savannah—and finally, cabbage-trees and balatas bordering on the Cocal. The track opened on the beach about midway between the Nariva and the Guataro.

All the water-courses met with during the survey had a northerly or north-easterly direction. Four of them only bear names, viz., the Cunape, about one mile and three-quarters, and the Canqué, five miles from Tamana; the Carapa, one mile and a quarter, westward of the first savannah, and the Caratal immediately after the same. About six miles from the starting-point, Messrs. Sorzano and d'Abadie met with a low wet tract, and soon after, with an impassable swamp, which compelled them to alter their line by nearly a mile to the southward. These gentlemen observed, on their route, several cacao-trees: were they accidentally planted, or are they the natural growth of the country? They fell in also with brush-wood, and a few lime-trees; such being evidence that, during slavery, the *maroons* or fugitive slaves resorted to that spot, as to a fastness.

In the following year, Mr. d'Abadie received further instructions to find a more direct road to the eastern coast, from Savannah Grande to the Cocal, or to Mayaro. He started from Monkey-town on the 19th of March, 1850, but completed his survey only the following year, when he reached the Cocal one mile northward of the mouth of the Guataro—the whole length of the track being twenty-six miles. He followed, as far as possible, the direction of ridges, in order to avoid the low swampy grounds. For seventeen miles, all the water-courses had their flow southward towards the Guataro. The principal were the following: the Mairoa, three miles from the starting point; this river ought to be regarded as the true origin of the Guataro—not only because it is the first important stream which occurs on the track, but its position corresponds better to the range of that river as marked down on Mallet's map than to that of his Moura.

Next to the Mairoa, and within a range of three miles, came in succession, the following water-courses: Bell's creek, the Poui, the Cunapure, and its tributary, the Guarapiche—the Carib name of this latter river induces me to admit the existence of bitumen in the neighbourhood. The Cunapure corresponds pretty well, in position, to the Moura of Mallet. Two and a half miles from the Cunapure, flows the Caranache; about three miles from the Caranache, the Anapo; one mile and a half further eastward, the Agua-Clara; and, for about three miles, a series of smaller ravines or rivulets. Except the Mairoa, which has a gravelly bed, all these streams are muddy. For about six miles, a number of small brooks have their course to the northward, and a few to the southward, the road there following the dividing range. Among the former, are the Guatecaro, about five miles, and the Cascarudura, about one mile and a half from the shore.

Mr. d'Abadie having received new orders to connect the Tamana with the Mayaro track, left the latter about eighteen miles from Monkey-town, and, after a run of little more than four miles in a northerly direction, met the former between the two first savannahs, at that tract of rich land already mentioned. He encountered several water-courses, having an easterly direction, a swamp, and a tract of land partly level and partly waving, with a forest of moras: the ground bordering on the savannah was, in general, soft and intersected with swamps. At a later period, Mr. d'Abadie opened another track, about four miles from the beach, connecting the Mayaro path directly with the ward of Mayaro.

I have entered into these details, in order to indicate the real disposition of that extensive tract of low country stretching seaward of the Cocal, between the Lebranche and the Guataro, and I have come to the following conclusions: from Tamana, a ridge extends in a south-easterly direction towards Point Radix, dividing the basin of the Guataro from that of the Nariva; there exists no water-communication between the two rivers, a fact which had already been ascertained by Captain Columbine and by Mr. J. Carter. The natural slope of the country is evidently from the south-south-west to the north-north-east, as proved by the fact that all the water-courses—and mainly the Carapa and the Caratal—have their course in the latter direction, and that the swamps predominate towards the north, and the dry land towards

the south. Moreover, Mr. Carter had already discovered that the upper stream of the Nariva tended northwards, and then, by an abrupt bend, inclined towards the south. The numerous lagoons which exist throughout the whole extent of that low tract evidently owe their origin to the accumulation of waters flowing partly from the Lebranche, and partly from the Tamana ridge.

Report fixes the soil of Nariva as generally good—and even, in some parts, of the best quality. The district also abounds in excellent timber. The cultivation of the coco-palm might be extended over all those localities which are within tidal influence; and the natural savannahs might be turned to excellent account in rearing and feeding horned and other stock; also, with the refuse from the mills, swine might be fed in great numbers. Mr. Carter has tried the experiment, and succeeded sufficiently well to prove that, with good management, the rearing of animals might here become very profitable. Population of the county, in 1851, only 194 individuals. Males, 113; females, 81. Church of England, 77; Roman Catholics, 115.

CHAPTER X.

PRESENT CONDITION.—ADMINISTRATION.—IMMIGRATION.—SUGGESTIONS.

WHAT are the prospects of Trinidad? and who, under present circumstances, will dare to give an opinion thereon? Who, when these colonies are nearly abandoned by the British government as worthless possessions; when, by gradual depression, even the most favoured have nearly sunk to the lowest depths of misery—who, I repeat, can foretell whether they shall ever recover from their present depressed condition, or whether they shall not sink deeper into the abyss. I confess I know of none bold enough to offer such opinion; for the causes which have brought on the present lamentable state of things are at work still. In the year 1848, His Excellency Lord Harris wrote to Lord Grey as follows: "It is sad and painful to behold men expecting ruin quickly to overtake them, it is, perhaps, sadder and more painful to see them struggling and toiling against adversity, but with their energies dulled and their arms palsied, from their knowledge that their labours must be unremunerative, and that failure can be the sole result; it is most distressing to witness this, and, at the same time, to be aware that much of the misery from which they are suffering, and that which awaits them, is of a nature which they are unable to avert by any acts of their own." The noble lord had in view, at that period, the sugar planters mainly, for the fate of the cacao planters was already sealed, but what he then said has since become applicable to all classes—from the highest professions to the lowest grades of artisans; all and each are struggling against a misery "which they are unable to avert by any acts of their own." The unconquerable vegetation of the tropics has already overrun the cultivated fields of many localities, and giant creepers are covering the crumbling dwellings of ruined possessions; in both towns and villages, houses are left in a dilapidated state, through want of means—doors and windows hanging on one hinge, with jalousies knocked out. Individuals who twenty years ago could receive the weary traveller with all the comforts and honours of patriarchal hospitality, who were, in former days,

decently and neatly clad, are now seen walking about with dejected countenances and patched or tattered garments, and are satisfied, within the precincts of their now miserable shelters, with the food their slaves would once have disdained. Their children remain concealed in order not to expose to the public gaze their ragged condition and emaciated faces; discouragement harbours in every heart; dejection is verging on despair; money, energy, health—all have been gradually wasted away for the last sixteen years with no result. We are in a worse condition in 1855 than we were in 1854, in 1853 things were better than in 1854, and who dare assure they shall not be worse in 1856? Oh! "it is pitiable," indeed, "to witness a fine colony daily deteriorating; a land enjoying almost every blessing under heaven, suffering from a shock from which it does not rally; but the deepest pang of all to an Englishman, is to see the hearts and affections of a whole population becoming alienated from the country which he loves." —(Lord Harris to Earl Grey.) But what to Lord Harris was a deep pang, seems to be to our present rulers a perfectly indifferent matter. And yet, when we come to a comparison of the prosperity of some of the foreign islands with our own miserable condition, when we compare the protection extended to *them* by their governments with the abandonment in which *we* are left by our own, when we know our condition could be improved by a little solicitude on the part of our political parent—oh! then we feel that the alienation of our affections is but the natural consequence of the neglect, the cold indifference, manifested towards the inhabitants of these colonies. In fact, on what considerations are these colonies retained by Great Britain, if not for the sake of ministerial patronage? How altered is our condition—of us—the native inhabitants of this colony! Still, the fixed establishment remains untouched; nay, additions are made to the sacred edifice; the taxes are as heavy, or even heavier than formerly; the government as indifferent, or even more indifferent than ever. And yet Trinidad possesses many natural resources, and from its peculiar configuration and position can afford greater facilities for working out those resources than any other West India island. "Did I not see a prospect—I think a better one than in any other in the West Indies—of getting this colony through the present crisis," said Lord Harris in 1848, "I should not venture to propose that advances should be made; but looking at the

fertility of the soil, and the almost certainty of favourable seasons, I believe that, with assistance, there can be little doubt of its ultimate success." I have already stated what these resources are; it only remains for me to add a few remarks.

The island of Trinidad may be considered as consisting of two great valleys formed by three mountain ridges of various elevation. The middle and southern ranges are accessible on all sides, and might be crossed over at many points by carriage roads. The northern range is accessible only on the south or land side, there being but a few landing-places on the sea-coast. The two valleys might be easily run through, from E. to W., even by tram-roads or railways; thus offering every facility for land communication, and for the transport of goods to our great sea-port the gulf of Paria.

On the hills, cacao, coffee, cotton, and spices, might be cultivated with advantage, as exportable articles; and plantains, corn, ground provisions, and more delicate vegetables, for home consumption. The hills are generally very healthy, and might be settled and cultivated by a white population, and others, with a small capital. The plain might be reserved for the cultvation of the cane mainly; cacao and tobacco, however, should be cultivated in the *Vegas*, or the hollows of river valleys; the low swamps and less fertile tracts might be sown or planted in rice. In the case of some other cultivations being introduced—as indigo, sesame, &c., they could be carried on in inferior lands.

Tram-roads might be laid down between the Oropouche river and Port-of-Spain in the northern basin; and between the Guataro and La Brea in the southern; passing close to the rich tobacco district of Siparia. I make La Brea the terminus of the southern tram-road in consequence of its depth of water. These are the local or intrinsic capabilities of Trinidad, but these are not its sole advantages. Its geographical position, adjacent to the province of Cumana, in the republic of Venezuela, and almost at the mouth of the Orinoco, renders it, in a commercial and political point of view, as important as Cuba. Wherefore, though the fate of Trinidad be intimately connected with that of the other British colonies, yet her prospects may be greatly influenced by extraneous circumstances, for they in a great measure depend upon the fate of the neighbouring republic of Venezuela. If ever Venezuela becomes tranquil and prosperous, Trinidad will

share in that prosperity, for the magnificent gulf of Paria is a vast harbour common to both; in fact, it is, or can easily be rendered, the great sea-port of the rich and extensive basin of the Orinoco, as may be ascertained by glancing at the map of Venezuela.

The Andes form, southward of Popayan and about the second degree of N. latitude, a trifurcation known by the name of the Cordilleras of New Granada. The easternmost chain is the Cordillera of Venezuela, which traverses that republic from S.S.W. to E.N.E., from Almaguer to Cape Peña, or even Point Galera, the north-eastern point of Trinidad. It runs, at first, N.N.E. from *San Miguel de Mocoa* to Valencia,—Pamplona, Merida, Truxillo, Barquisimeto and Valencia, being left on the northern or sea-coast side; and San Juan de los Remedios, Casanare, and Varinas, on the southern or Orinoco side of the chain. From *Valencia* the Cordillera runs due E., and so close to the *Carribbean Sea* that its very base is washed by the surf; Maracaybo, Carracas, Barcelona, and Cumana, being thereby separated by rugged mountains and high table-lands from the basin of the *Orinoco.*

That immense basin extends from the Cordillera, eastward, to the mountains of Parima and the Atlantic; and southward, from the same Cordillera to Rio Negro. Besides a number of less important streams, it is drained by the following large rivers: viz., the Guarico, the Portuguesa, the Apure, the Arauca, the Meta, the Vichada, and the Guaviare—all coming down from the *Cordillera;* and, by the Ventuari, the Caura, and the Caroni, which have their sources in the Parima system of mountains: all are tributaries of the mighty river.

This short description shows that the Cordillera of Venezuela has been thrown up by nature, as an unsurmountable barrier to commercial communication between the basin of the Orinoco and the Caribbean Sea, so that, either Angostura or Port-of-Spain must become the great emporium of Venezuela, and the Orinoco, or the Gulf of Paria, the outlet of the interior basin.

Angostura is a fine river-port, with deep water, but about 300 miles from the Atlantic: the temperature there is oppressive, though the climate cannot be said to be unhealthy. The navigation against the stream is, however, very tedious, principally during the overflow of the river, viz., from May to October, when the currents are very strong; whilst, all along its banks, the marsh effluvia are very deleterious, and particularly so at the low-water season.

There are, at the mouth of the river, low islands and sand-banks, or shoals, which also render the navigation intricate and dangerous; so much so, that large vessels would not find it safe to venture, without experienced and skilful pilots, through its various channels. To remove, or even permanently to remedy those obstacles, cannot be regarded as an easy undertaking. On the other hand, the Gulf of Paria is not only one of the safest harbours known, but is fully capable of sheltering the united fleets of the world: hurricanes are unknown here, and ground swells are felt but seldom, and that principally within a line drawn from the first *Boca* to *Point la Brea;* in fact, the navigation of the Gulf is, at all times, safe and easy; whilst the dangers, if there be any, attending the passage of the smaller *Bocas*, or entrance mouths, can easily be avoided by passing through the largest, or *Grand Boca*. The Gulf is considered healthy, and even the *yellow fever*, in its occasional and rare visitations, has had but few victims among the shipping. There is a never failing and plentiful supply of excellent spring and river water in the island, and fresh meat can be procured from the province of *Cumana*, to almost any extent; dry docks might also be constructed at the Gasparil Islet, and warehouses erected there for ship stores; there are even reasons to hope that the patent fuel from the bitumen at La Brea will prove, under the usual discouragements of new competition, a valuable substitute for coals, assuring the supply of steamers on the spot, with a fuel combining advantages of cheapness, less bulk, and equal efficiency. Now, the Gulf communicates with the Orinoco by means of the Caños of Manamo, Pedernales and Macareo: small craft bound to Trinidad, from Angostura, or *Ciudad Bolivar*, pass generally through the *Caño Pedernales*. These, or at least one of these natural canals, might be rendered perfectly navigable for large steamers and other vessels, which would carry the produce of the immense and fertile basin into the Gulf, for the lading of vessels awaiting their cargo; —or, these vessels might be tugged through to *Barancas*. It is only surprising that an attempt of the kind has not, as yet, been made by some enterprising British company, especially as but little capital would be required at the outset. The attention of His Excellency Lord Harris had been attracted to the subject, as proved by the following extract:—"I have already, on several "occasions, pointed out to your lordship the very great benefits "which would accrue to this island, if a more liberal policy could

"be adopted respecting the trade with other countries, more "especially with France and Spain; a still greater one would be "gained, if the neighbouring republic of Venezuela could be "induced to modify its customs duties.

"Should the steam communication between *Port-of-Spain* and "Maturin, which I have shown every inclination to support, be "established, it will prove very beneficial; but I am more anxious "to see a similar one, only on a larger scale, set on foot between "this and the *City of Bolivar*. There are many reasons for hoping "that Port-of-Spain may eventually become the receptacle of the "trade of that vast tract of country, from which the *Orinoco* draws "its waters. A steamer passing by the Caño *Macareo* could reach "Bolivar in seventy hours, and return in fifty, whereas, merchant "vessels take from five to twenty days to ascend to that place "from the chief mouth of the river. An American Company has "already entered into contract with the Venezuelan Government, "to navigate the Orinoco, from Bolivar upwards, for a distance of "700 miles, by steamer; it only requires, therefore, to connect "Trinidad and Bolivar by similar means—only I hope by an "English Company—and the interior of the western part of that "vast continent would be opened to enterprise, and an invaluable "impulse given to the commerce of this island."—(Lord Harris to Earl Grey, 21st February, 1848.) It is said that this American Company has since made a profit of forty-five per cent upon its capital.

Unlimited, therefore, are the advantages enjoyed by Trinidad, and offered by the Gulf of Paria; how long they shall remain sterile, God alone knows! Great are the obstacles to be overcome: we have to deal with a jealous people, prejudiced against foreigners, with a Government blind to its own interests; we have to struggle with our own indifferent Government and people; and yet, "under the fostering care of Great Britain (if she will foster "it) this colony may become, not only prosperous, but may prove "of vast importance in assisting to civilise the fine and extensive "continent in its vicinity."—(Lord Harris to Earl Grey.) It does indeed make one's heart bleed to behold so many advantages offered by Providence, left untouched and dormant. It is our duty, nevertheless, to prepare ourselves, by all rational means, for any favourable contingency which may arise; to propose and adopt such measures as may, not only put a stop to our downward pro-

gress, but render Trinidad a desirable home for all who may choose to bring hither their capital and industry. This can be done by judicious legislation, and by the fostering of immigration on liberal principles.

I have already stated, in the Introduction, my views regarding the principles of legislation I consider as the best adapted to these colonies and to our circumstances. I must now add, that the defects I have pointed out become more apparent still, when the comparative position of this colony of Trinidad is taken into consideration, viz., that it is a newly settled country with a scanty population, and less advanced in many respects than some of the old islands. I have more than once heard our talented attorney-general, the Honourable Charles William Warner, say, that many of our laws "were in advance of the civilisation of the people." Concurring in this opinion, to a certain extent, I conclude that these laws are not adapted to the intelligence and circumstances of our population; and, as they are borrowed from the British code of enactments, I must say that the learned gentleman has been very inconsiderate in his zeal to introduce English legislation indiscriminately into Trinidad; it would be well, if with British laws, it were possible to introduce British spirit. But what is worse still, with those laws has been introduced, and is sedulously cultivated, the spirit of *laissez aller*, as regards their execution; and yet, it must be admitted by all who have any experience in the colony, that the public will not take an interest in their execution, for reasons which have already been explicitly stated in the Introduction. In no country do I consider the system to be a wise one; but, in countries such as Trinidad, I deem it to be the worst which could possibly be adopted. Leave it to the people themselves to enforce the execution of the law, and the law will remain unexecuted; place it under the safeguard of the public, and multiply at the same time the formalities through which it is necessary to pass for obtaining redress of grievances, and individuals will remain indifferent: this, let me declare at once, is the case here. On the other hand, appoint officers to enforce the laws, and grant them at the same time full liberty of action, the consequences will soon become apparent, the law will still remain unexecuted. In fact, the only laws which are properly obeyed, are those regulating the revenue, because the government has a direct interest in them: let the whole administration be conducted

in the same earnest-mindedness, and the people *must* feel more contented. It is clear, it is undeniable, that here the government must *act*, and rigidly exact that the officials do also *act zealously* and *judiciously*. Few of our laws are punctually obeyed, or properly enforced. Look, for instance, at the Police Ordinance. I mention this Ordinance, in particular, because it bears directly on the comfort of the inhabitants, and is of daily application. If the law be left unexecuted, individuals, even those directly concerned, will not complain; not only because they are ignorant of the method of procedure, but because the result, as far as they are concerned, is in no proportion with the trouble it occasions; the government ought, therefore, to interfere through its agents, were it solely and merely in vindication of the majesty of the law itself, and as the guardian of the general interests of society. Again, in order to render the administration efficient, it is necessary that there should be an uninterrupted subordination throughout the different branches of the general administration, from the most inferior official up to the head of the government. Here, on the contrary, in many cases, the responsibility is shifted from the shoulders of one official to those of another; and yet, in all firmly organised administrations, and such as it is desirable ours should be, there ought to be no interruption in the graduated action.

Many, too many, instances might be cited of what has been advanced, but I will again select the Police Ordinance. The stipendary magistrates have almost daily requirements for employing the police force resident in their respective districts; charged with the summary administration of the laws, the police are assigned them as the executive officers of their courts; they are specially appointed to adjudge and execute all that comes within the province of their authority, and yet they do not possess any effective control over the acts of that police. Should the officer be neglectful or remiss in the performance of his duty, the distant and uninformed agency of the inspector of police must be sought to decide the point; in fact, the magistrate must appear as prosecutor against a police officer before an inspector of police in order to obtain the award of punishment to a policeman for neglect of his public duty. For instance, it is the duty of the policeman to serve warrants in petty civil actions; * now, in case they neglect

* The law is now altered, and bailiffs perform that duty.

to perform their duty, either through a wish of avoiding the trouble, or because the debtor is some friend, the magistrate has no other remedy than to lodge a complaint with the inspector of police; and yet the creditor has not only been put to the inconvenience of delay, but also of losing the amount of the debt, since the debtor has had time to change his abode, or even to remove to some other district. Again, the policeman may have received the money, but as he did not deposit the same at the station, the creditor must, in many cases, submit to the alternative of either being defrauded of the amount of his account and disbursements, or of entering an action against the policeman for a further recovery of the sum paid. Should the latter be sufficiently *rusé*, he may, backed by friends, evade the law and put an end to further proceedings by obtaining his removal to some other district. But, it may be asked, could not summary measures be forthwith adopted on the production of the policeman's receipt? By no means; the duty of the stipendary magistrate is completed when he has given sentence, and generally, who is the sufferer? The poor ignorant labourer or tradesman who can be imposed upon, not the individual who knows how to enforce his just claims. And where, ultimately, does the odium and the responsibility fall? On the government, because the people will make no distinction between the government agent—whoever he may be—and the government itself; between those who are charged with the execution of the law, and those who are its framers and guardians; and it must be confessed, that on this point, the people are decidedly logical in their ideas. It is, therefore, the duty of government—a duty which it owes to the public and to itself—promptly and unflinchingly to interfere whenever its agents have acted illegally, unjustly, or fraudulently; such a line of conduct would remove many causes of complaint and dissatisfaction, and would induce the people to consider the government in the light of a protector and defender of their rights, rather than as their oppressor and the upholder of wrong.

I may again mention, as an instance of the baneful influence which the manner of enforcement of certain laws may exercise on the minds and feelings of the people, the method of procedure in cases of arrearage or non-payment of house-tax. That procedure is harshly summary, and matters have been so disposed, that any debt due to government is recoverable at the slightest possible

amount of trouble to its agents, but with excessive annoyance to individuals. For instance, let a house-tax become overdue, no effort is taken to reach the proprietor, but any property found in or on the premises, is liable to seizure; and thus the poor occupant's goods or furniture may be levied on for tax, though he himself be not the defaulter. In case of his not being possessed of the money for ready payment, his little *all* may be seized and sold, so that an honest tenant is actually made to suffer for the neglect or dishonesty of his landlord; and, as is generally the case, if the property be sold for only one-tenth of its real value, he is made to bear the worst consequences of an act of which he is not guilty. Such a sufferer, in my opinion, rightly comes to the conclusion that injury has been done *him* for the undue benefit of the *government*. I confess I do not fully understand the principle upon which the provision is based, unless it be granted that it is with a view to relieve the tax-gatherer from the trouble which is, by law, entailed on the ordinary creditor. I am aware that it is said, the tenant has a remedy against the landlord, as he is in the position of his debtor for house rent, and consequently can retain the money he was compelled to advance, and thus repay himself. This is all very well; but supposing a dishonest landlord should distrain upon the tenant's property, under pretext of the latter's being indebted for rent, the poor tenant will be obliged to pay a second amount, and then enter an action against the proprietor for the recovery of the former, primarily paid for house-tax. Now, in case his goods or furniture should have been unavoidably sacrificed before the doors of the court-house, what redress can he expect? and how many annoyances will he have to encounter ere he can obtain that redress? I believe an easy remedy can be provided, by at once exacting from one or more tenants the amount of their rents, so as to make up the house-tax. Sufficient, however, I think, has been said on this subject satisfactorily to prove that in many cases the people are made to suffer through the neglect of the government, or on account of some injudicious provision of the law, dissatisfaction being thereby created throughout the whole extent of the land. Such enactments, I must confess, are, in my opinion, rather *too* much "in advance of the civilisation of the community."

The above observations on the enforcement of the law in general, and of the house-tax in particular, are also applicable to

the Territorial or Warden Ordinance. But, as the working of that ordinance has hitherto greatly affected, and must continue greatly to affect the general welfare of this community, I wish to enter fully into the merits and demerits of its importance, as a law of the land. Continue the operation of the ordinance with its manifold defects, and the rural population must continue to feel its unequal pressure, and as a consequence, to murmur and be discontented. On the other hand, with judicious amendments, not according to preconceived theories, nor in a spirit of reckless indifference as to its operation on the general body of tax-payers, but with a well-conceived design of insuring its legitimate and beneficial working, legislators and rulers will be certain of securing the confidence and ready concurrence of those it affects. Under all circumstances, however, upon the executive officers of that law must essentially depend whether it shall prove a blessing or a curse to the community.

I regard the Territorial Ordinance as the most important of our laws, in so far as it contains the elements of municipal institutions, affects the well-being of the rural population, and involves the agricultural, and consequently, the vital interests of this community. Moreover, it brings the government into almost daily contact with the *administrés*. I therefore propose to examine the Territorial Ordinance under the following points of view, viz., the principle of direct taxation, that of local rates for local purposes, the spirit of the ordinance as manifested in some of its clauses, together with the method of its operation.

Direct, has always been regarded as more oppressive, than indirect taxation; not only because its action is *direct*, but inasmuch, also, as the tax is paid in full, at certain definite periods, and, generally, bears unequally on the taxpayers. The more ignorant the people, therefore, the greater must be the inconveniences of this mode of taxation; the burden of indirect taxation, on the other hand, is not felt; it is paid only when the taxed commodity is required, and forms part of the purchase-disbursement: it is also, to a certain extent, voluntary—since no one is actually compelled to buy the taxed articles. And yet the principle of direct taxation is just and wholesome:—It is just, because people ought to pay for the protection they receive from social institutions, in proportion to the amount of protection afforded, and security enjoyed. It is whole-

some, because it causes the people to place a value on the social institutions which they themselves aid in establishing and maintaining: so far, then, I give full approbation to the principle involved in the Territorial Ordinance. The export tax, which it has replaced, though apparently more fair and less grievous in its operation, was yet unjust, since it affected those only whose products were exported, whilst the articles consumed in the island were exempted from its operation.

The rates payable under the Territorial Ordinance on lands, houses, &c., are, to all intents, applicable only to *local purposes*. This principle, though *apparently* as unexceptionable as the former, is, however, subject to many exceptions, and requires a great deal of discretion, in its application. What are the exact limits between *local* and *general* purposes? And are not these limits subject to contraction and extension, according to the more or less advanced state of the civilisation of each country? The answer to these questions is not as easy as some may imagine; and to be able to answer them, as far as Trinidad is concerned, let me ascertain what are the items placed to the charge of the wards. "Each ward shall be charged with the making and keeping in repair of the public roads, within the ward; the cost of establishing and maintaining public schools of instruction, and the payment of the teachers; the establishment of houses of refuge for the destitute; the establishment of dispensaries, &c.; and shall be bound to contribute to the expense of the general police-force, and to pay the expenses of the maintenance of persons admitted into the Colonial Hospital." (Clauses VIII. and XXI.) In addition to these, there are charged against the wards the expenses of Criminal Justice, and of Inquests; it is also now proposed to add thereunto the costs of public executions.

As a rule, all appointments tending to the benefit of the community at large, ought to be defrayed from the general funds—such as, the general police, public education, hospital relief, &c. Moreover, whenever there arises any doubt as to whether certain expenses ought to be charged to the general outlay, or defrayed by the ward-funds, the latter should certainly have the benefit of exemption. Otherwise, not only would the least populated, the remotest, and generally, the poorest districts, be made to bear a larger proportion of taxation, but such might be the nature of circumstances, as even to deprive them, if not altogether, in a very

great measure, of the advantages of civilisation. Whereas, the different parts of a same country ought to be bound one for all, and thus afford mutual assistance for the promotion of the general welfare.

As to education, it is evident that its diffusion is for the benefit of the community at large, as well as for that of private individuals—but not of the peculiar locality wherein they reside. By removing ignorance, and placing within the reach of individuals the means of working out the natural faculties with which they have been endowed by Providence, education promotes the general welfare. Besides, can it be said that the education afforded to an individual by ward A, is not for the benefit and advantage of ward B, whither that individual, once educated, may afterwards remove and therein settle ? I am, therefore, of opinion that part of the expenses of public education ought to be charged to a general fund—be it the treasury fund of the colony, or a special fund, set apart for the purpose. The teachers, for instance, could be paid out of the educational funds, and the wards could furnish the school house and teacher's residence. So long as this is not done, there cannot be any reasonable hope that knowledge shall be diffused, or an effectual system of education established.

I also consider that the preservation of any individual's life is for the benefit of the whole community, and not of the peculiar spot which he has actually inhabited; for the individual whose treatment at the colonial hospital is charged to the ward-funds, at the rate of one shilling per diem, may have been residing there for a few months only, and may, after he is discharged from the hospital, leave the ward for ever. To be useful, the colonial hospital must be made a really public institution, or it will remain what it is at present—an institution for the advantage of the few. It seems to me, therefore, very plain that the expenses of the colonial hospital ought to be defrayed from a general stated fund —say from a special fund contributed by the wards of the colony, and from other sources.

The question of roads is somewhat more complicated; for, if some roads are clearly for the sole advantage of the ward they traverse, others may equally claim to be for the advantage of the whole community, or of several wards jointly; at least, this principle obtains, more or less, in all countries. It had been adopted here, and the roads of the colony were accord-

ingly distributed into two classes, viz. the *Royal*, and the *Ward* roads. This arrangement has since been abandoned, and there is, at present, no road maintained from the general funds of the colony; though the grant of £8 sterling per diem of active service, to the steamer "Lord Harris," for plying between the northern and southern divisions of the island, may be regarded as a departure from the principle now in operation.

Important as these questions are, they however yield precedence to that which arises from the manner in which the tax is assessed. Direct taxation is oppressive *per se*, but it becomes more so, when it is not made to bear on all equally, or at least, as equally as possible; and this is the case with the Territorial Ordinance. It establishes a privilege in favour of the producers of exportable articles; for, part of their property is exempt from taxation, as shown by the following clause of the Ordinance:—"Provided also and be it enacted, that as regards all land cultivated or in pasture, the rate hereby imposed on houses, shall be paid only in respect of the principal dwelling-house on any such lands, and any house or building, which may be let or used as a shop, or which may be let out for rent, *and not on any other house or building on such lands.*" (Clause XXVIII.) Therefore, all buildings, directly or indirectly used for the manufacture or curing of sugar, cacao, coffee, &c., are exempted from taxation; so that the privilege is *clearly granted to those* who are possessed of a larger amount of property. A cacao, or coffee, but especially a sugar estate, is of no value—except as mere tracts of land under cultivation—without the mill and curing trays of the former, the engine or mill, the boiling, curing and mogass houses of the latter, or without the labourers' cottages, and the stock sheds or pens of both. I have said—and I reiterate the assertion—that our prosperity entirely rests on the cultivation of the exportable articles, and of sugar, in particular: their production, therefore, *must* be encouraged by all just and reasonable exceptions, but, in no case, ought legislation to be warped and rendered partial for the purpose. Afford encouragement to the planter, by aiding immigration, by exempting from taxation the agricultural implements, machinery, and other articles, which may be used in carrying on cultivation or manufacture; for this is no privilege: but, never exempt any part of an estate from a charge, which another property is made to bear; for this is privilege,

and, of course, must be regarded as a gross injustice by those who do not enjoy the like immunity. It is most essential that the law should never convey the idea of partiality, inasmuch as it is something holy, and sacred; and whenever, for any partial end, that character is impaired, it loses the reverence due to its high authority, and becomes paralysed in its action. Moreover, let it never be forgotten that, for centuries, two distinct classes alone existed in these colonies—the slave-holders, and the slaves; and this original distinction of classes divided society into two hostile camps. As a natural consequence of former social institutions, the great majority of small proprietors is composed of the emancipated, and coloured people; and whenever any such distinction shall be made, as exists in the Territorial Ordinance, the emancipated and the coloured classes will see, in such distinctions, a continuation of the exploded system they have so many reasons to curse. The sentiments engendered by past wrongs, are not yet extinct, and let not injudicious enactments revive their virulence. The Territorial Ordinance evidently requires amendment in this respect.

It is said, in extenuation, that the land and house-tax being raised for local purposes, it matters not whether the annual rate be levied on the lands only, or on the lands and houses jointly: this may be correct as to the ultimate result, yet even then, only as regards those wards wherein but one staple would be cultivated. But, as such is not the case in any ward of the colony, the objection holds good; besides which, the question of principle still subsists in its full force. Now, since on the admission of those who defend the present plan, it matters not whether the rate be levied on the lands only, or on the lands and houses as a whole—let the clause be amended at once, and the exception which now exists, to the vitiation of the very principle of the law, will then have been obviated, without causing any inconvenience to the parties concerned, and with great benefit to legislation in general.

The following plan of amendment might be adopted: Labourers' houses should be rated singly; all buildings used directly and indirectly for manufacturing purposes, might be assessed separately, or as a whole, according to a certain scale of valuation. For instance, all cattle mills, and all steam or water mills, under a certain amount of horse-power, would form one category; and all similar machinery above that amount of power, another division. The boiling, curing, and mogass houses, as also

the pens and outhouses, being comprised, together with the mill, under one and the same valuation. As to cacao and coffee houses or any other similar buildings, they should be valued according to their size, or the area of the curing trays.

The Territorial Ordinance bears another feature which, in my opinion, leaves it open to serious objections: the tax is not uniform, but, on the contrary, varies according as the land is under cultivation, or otherwise. I remember that the leading objection to the export duty was its being a "tax on industry;" whereas the planter was made to pay in proportion to his produce—and consequently in proportion to his exertions—and it was mainly on the ground of that objection, that the export tax was done away with. Now, is not the present plan as objectionable, and even more so,—since the tax thus levied on industry is so utterly disproportionate? For, the moment the land is cleared and brought under cultivation, its value is enhanced from "ten shillings" sterling to "ten pounds sterling" the acre. (Clause XXIV.) This provision implies that cultivation gives value to land; true—but that value *may* vary, and really *does* vary, according to the article cultivated. Therefore, the tax, to be just, ought to vary with the article cultivated. The principle was acted upon in the first Territorial Ordinance, passed in the year 1847—"And be it enacted that such rate shall be made upon all lands, upon the value of the same, estimated as follows: that is to say—lands cultivated in sugar-canes at thirteen pounds sterling the acre; lands cultivated in cacao, coffee, cotton, provisions, or other cultivation except sugar-canes, at six pounds ten shillings sterling the acre; pasture lands, at three pounds five shillings sterling the acre; and uncultivated lands at thirty shillings sterling the acre." (Clause XXV.) The Ordinance was amended in 1852, and this clause altered in the following manner:—"And be it enacted that such rate shall be made upon all lands upon the value of the same estimated as follows:—that is to say—lands in cultivation, *whatever may be the nature of the cultivation, and pasture lands*, ten pounds sterling the acre; and *uncultivated lands*, at ten shillings sterling the acre." (Clause XXIV.) So that the value of sugar lands was reduced from thirteen to ten pounds, and the value of cacao, coffee, provisions, &c., increased from six pounds ten shillings to ten pounds sterling the acre. It may not be out of place to remark that, if the value of sugar lands has diminished from the year 1847 to the year 1852,

that of cacao, coffee, and provision lands has certainly not increased during the same period.

The distinction drawn between cultivated and uncultivated lands shows, at once, that forest lands which are so very valuable in Europe, are considered here as of very little worth. The truth is, that our forest lands, as such, are valueless; and any land, to possess a realisable value, must combine the advantages of fertility, proximity to a market, and to a settled district. Now from the plan adopted certain consequences follow, which at once prove its unsoundness and impolicy.

The assessment on lands and houses is made on or before the thirtieth day of September, every third year, by a commissioner appointed by the governor: returns are also sent to the wardens every year, in the month of January. The assessment is made on the declaration of the occupiers of the land, so that a true and faithful return entirely depends upon the declaration of such occupant. Upon this clause of the Ordinance depends the equality of its operation, and the certainty of the revenue it purports to raise; yet, no check is provided by which correct returns can be obtained of the actual extent of cultivations on an estate. The occupier makes his declaration: it may be true, it may be false. Should the commissioner doubt its accuracy, what authority does the law confer upon him for verifying or correcting it? The XXXVII clause provides that the cultivation may be surveyed; but should the declaration of the occupier be found correct, then the ward must pay the expenses. The commissioner, therefore, may apply to the warden, but the warden shifts the responsibility, and the declaration is invariably adopted. But, even without being dishonest, the occupier can evade the law by making a true declaration to the commissioner, and immediately after, placing under cultivation twenty or thirty acres of land, upon which he will continue to pay, during the term of three years, the tax at the rate of uncultivated land—so that the equality in the operation of the law is defeated, and a direct premium extended to bad faith and dishonesty. The only parties who cannot wholly evade the law, are the cacao planters, and those who might plant fruit, and such other trees as begin to yield only after four, six, or seven years. It is, therefore, perfectly clear that the present system opens the door to many abuses, and—what is more deplorable perhaps—accustoms the population to what I do not hestitate to term *immoral*

practices. The only remedy is uniform or invariable taxation: let the land be uniformly assessed, be it under cultivation or not, but, let it be valued according to its quality—though I am aware this latter condition acts as a phantom on the minds of many. I readily grant that a fair valuation of soils offers some difficulty; but this ought not to deter legislators from attempting the establishment of a system which is, by far, the most operative and, unquestionably, the most equitable.

Land generally derives its value from its proximity to a market, or from its quality: but position, being a condition subject to variation, cannot be taken as a basis for taxation; whilst, on the other hand, the value dependent on the composition of the soil, is something intrinsic and permanent. The only difficulty, therefore, is to determine the quality of the land, and that difficulty is not insurmountable. I do not pretend to say that, for the purposes of taxation, the land should be classified under as many heads as can be established by chemical analysis, but our soils could be easily divided into several categories, for all practical purposes—say five, or even three classes—within which they would be comprised.

I have already stated, in the third chapter of this work, that the vegetation of wild plants affords very good data for determining the quality of soils; added to which is the colour, and, when the land is already under cultivation, the characteristics derivable from the appearance of the cultivated plants themselves. Based on these simple and general principles, I would suggest the following classification: First Category,—all soils wherein carats, cedars, balisiers, &c., grow in abundance, and in which all our staple articles may be cultivated with profit. Second, all lands whereon the same wild plants or the mountain cabbage, and some others thrive, but in which, from their situation, one at least of our staples could not be raised at all, or to any profit—such as our best mountain lands where the sugar-cane cannot be cultivated, and some other good lands where the cacao does not grow well. Third, all lands wherein cacao could not be planted with any chance of return. Fourth, those in which, neither cacao nor the sugar-cane could be cultivated with success; and fifth, all other lands of an inferior quality. In case it might be thought preferable to have only three categories or divisions, the following might be established: First, all lands whereon our staples might be cultivated to advantage. Second, all lands on which cacao could not, but whereon

the sugar-cane could, be cultivated with profit. Third, all soils wherein the cultivation of either cacao or the cane could not be attempted with any prospect of success.

A commission, composed of planters and others, could be appointed to form those categories; and the commissioners might receive a remuneration in proportion to the quantity of land classified. The report, or return, of the commissioners for each ward, should be lodged at the warden's office, and their decision left open to objection during a period of three months. Any person objecting should appoint an appraiser on his part, one of the commissioners being appointed on the part of the ward; in case these should not agree in judgment, they could choose an umpire out of the ward, and his decision would be deemed good and final. The only objection to the adoption of this plan, is the expenses it would entail on the community; but, allowing that its operation cost the colony even £3,000 or £4,000 sterling, I still consider the result as fully worth that expense. On the other hand, should the council deem it impossible to carry into effect the proposed measure, I still contend that the tax should be uniform, and the value set upon lands made invariable; not because I consider such a plan as in itself a good one, since our best lands may be worth from thirty to fifty dollars an acre, whilst some tracts are not worth more than five or ten dollars, but because I consider it as less objectionable than the present system. Again, in order to establish a fair valuation, it would be well to take an average between the price of our best and that of our worst lands.

The advantages resulting from uniform taxation would be the following: There would be no necessity for triennial assessments, and consequently no expenses incurred for the remuneration of commissioners; each warden should be furnished with a book showing the quantity and value of land appertaining to the tax-payers in his ward, and he would thereon make his assessment; there would then be not only no possibility of defrauding the law, but an indirect inducement would be offered to landholders to cultivate the soil, since it would remain subject to the same amount of taxation, either as cultivated or uncultivated; whilst at present, some make the clearing of their lands a matter of doubt and consideration since the tax is increased tenfold by the mere act of bringing the same under cultivation. In case such scales of valuation as have been suggested could be formed, the following

highly important advantage would be afforded to the purchaser of a property: he could, by applying to the warden, form at once a just idea of the value of the land offered for sale; and I do not think that, under such circumstances, proprietors would deem it their interest to undervalue their lands. Such are the remarks I have been induced to offer on the scope of the land-tax. I must now show how, in its operation, it has been made but too often an instrument of oppression.

The tax is paid to the warden generally, or to his clerk or constable. I have not heard of one single instance of a warden having *personally* received the tax and demanding it a second time; but I *have* heard of clerks, constables, or even collectors, specially appointed, having received the amount from poor ignorant people, either without giving receipts, or without accounting for the same to the warden. In the latter cases the tax-payer was compelled to disburse a second amount; or, in case of refusal, was placed on the list of defaulters, and his property advertised for sale. In all instances where the receipts could not be produced the warden was clearly blameless, but I cannot admit his excuse —on a receipt being exhibited signed by his agent—that as he could not account for money he had not received, the tax-payer was a second time liable. In fact, few are the exceptions in which the wardens invariably received the rates themselves, or even issued their receipts to their agents. Unfortunately, therefore, such frauds were too common, whilst redress was of rare occurrence—but in one case within my knowledge—either because the poor tax-payer felt reluctant to embroil himself in a law suit, or that he did not know how to proceed, or even whether it were possible to proceed at all. I know of even a still harder case, viz., of property having been sold before the doors of the Court of Intendant, though the proprietor had paid the tax and was in possession of the voucher, and of his being eventually obliged to compromise with the purchaser.

Now, I ask, was I not justified in asserting that the Territorial Ordinance had been on many occasions made an instrument of oppression? And, where lies the responsibility in the eyes of the people? On the government; and justly so, because in all sound opinion the government is the natural protector of the people's interest, and whenever the people are oppressed in the name, and apparently for the advantage of the government, it becomes the

duty of the latter to interfere. Had criminal prosecutions been instituted against the perpetrators of such shameless spoliations, not only would those infamous acts not have been of such frequent occurrence, but the people would have felt satisfied that the government was acting really and truly as their protector. But, unfortunately, instead of a mitigation in the operation of direct taxation, it was rendered inflexibly oppressive. It was a hard case, indeed, for a poor man to pay a double tax because a dishonest agent had not accounted for the first assessment to the warden; it was a hard case to see his property advertised, he himself not being a defaulter; and it was a harder case still to be unable to obtain redress. This I consider to be one of the most deplorable results of the "*laissez aller*" system.

Another frightful cause of annoyance and dissatisfaction arose from the way in which payments were made for work performed in the wards. "All payments to be made for the public uses of any ward are made by the colonial treasurer, on the order in writing under the hand of the warden of such ward for the time being, to be approved by the governor."—(Clause XLIX.) So that, in many cases, an individual contracting for a very insignificant amount of work in a ward, is obliged to come to town from a distance of six, ten, eighteen, or even fifty miles, to receive his wages—often a paltry sum—and, in case the order given by the warden is not in due form, he is sent back for a new one. Again, should it be packet or council day, or for any other reason, the payment is postponed to the next day, or that following—the greatest part, or it may be, the whole of the money to which the contractor is entitled, being thus spent in journeying to and fro or waiting in town—besides the loss of time and inconvenience arising from absence. The Ordinance requires revision in this as in other respects. It has been amended lately by the amalgamation of several wards, in order to form ward-unions, and the appointment of union-wardens; but this alteration I apprehend will not prove a change for the better. Lord Harris perfectly understood the urgency of multiplying the official agents, in order to place them within reach of the people, as well as to facilitate the general administration of the colony; and with this view, each of the old quarters had been by him formed into a ward, which was placed under the authority of a warden, that official himself being a respectable inhabitant of the ward whenever practicable. Instead

of these forty-three wards created in the year 1847, there are now ten unions; and in the same ratio, ten instead of forty-three wardens. As regards the appointment of the latter, the rule established by Lord Harris has been reversed, and the warden cannot *now* have any landed interest in the union to which he is appointed; so that he must be, in so far, a perfect stranger both to the inhabitants and the interests of the district over whom and which he is called to preside. Time will prove whether the change is a judicious one or not; my impression is that it will not succeed.

It will be granted, I assume, by all who lived in Trinidad at the period of emancipation, that some sort of organisation, similar to that introduced by His Excellency Lord Harris, was urgent. During the period of slavery, the masters had the entire control and government of the slaves and the whole slave population—that is to say, the largest proportion of the inhabitants of the island came but very indirectly under the surveillance of the Government. When, however, all were placed under the common law, and were governed through the same agents, direct taxation became necessary to defray the increased expenses of a more complicated administration, and more extended jurisdiction. Now, I think that the responsibilities of the wardens were both too weighty, and their respective functions too various and complex to be efficiently and successfully fulfilled by one individual. The warden was, at the same time, collector of taxes, surveyor of the roads, and administrator of the ward—all functions requiring much time and close attention. Moreover, this accumulation of such onerous offices in one and the same official, prevented all check to undue authority. That the ordinance was faulty, in several respects, is proved by the alterations which have since been made,—though still the most objectionable parts are left untouched. It is also very evident, that the principle upon which the ordinance was originally based, has been violated in all its integrity; in fact, it has been made an auxiliary to the treasury of the colony, instead of being, as it should be, an instrument in local revenue for local purposes. New clauses have been added to render it more stringent, the responsibility of the wards has been greatly increased, and it would really appear that no limits exist between general and local purposes; on the contrary, every possible burden has been made local, in order to free the general funds from the most legitimate charges. For instance, in the last edition of the

ordinance 1852, the following clauses have been introduced in sense :—Where action could be maintainable against "hundred in England," action is maintainable against the inhabitants of wards; the costs of prosecution of crimes are to be borne by the ward *in which they are committed;* expenses of maintaining patients in hospitals, are to be borne by the ward in which such persons *last resided.* These changes are, evidently, the result of the unfortunate policy which prevailed of enlarging the civil list, and increasing every other branch of expenditure. The ordinary revenue soon became inadequate to the expenditure; and, to the local funds were transferred expenses previously defrayed from the general revenue—the ward-rates being thus converted into a mere increase of taxation for general purposes. That some of the alterations made in the ordinance, have been introduced without any consideration of justice, becomes evident from the following elucidations :—A man leaves town for any part of the coast or country: on his arrival, he gets into an affray, and death ensues; he is arrested, tried, and executed. The entire costs of his trial and execution, heavy as they may be rendered by distance, are charged against the ward X, because the crime was committed in ward X. Again, a labourer works all his life in ward A; he becomes invalided for life, and is taken by some friend to ward B, where he spends one week or one month: being a stranger to the ward, they manage to send him to the hospital; he is declared incurable, and yet, ward B is charged with the expenses, because he *last* resided there.

To familiarise the country districts with the principles of Municipal Institutions, by intrusting the inhabitants in their working, was certainly the predominant idea in the mind of Lord Harris. Again, to place within their reach elements and essentials of civilisation which they did not previously possess, was another philanthropic motive. But what has been done subsequently? Where are the local improvements contemplated? Where are—I do not say the asylums for the destitute, and infant schools—but, where are the school-houses? and how many wards are there with no school at all? New burdens have been laid upon the wards, when they could not even defray the most essential expenses contemplated in the first ordinance. I will only add, that local taxation, when raised for specific purposes, is like a sum of money invested on trust for special purposes. To divert it from that

object, to misappropriate it to other requirements, is a violation of the compact. The ward rates were raised for certain purposes, specified in the ordinance itself, as of the nature of local improvements. But to what purposes are the local funds now devoted? To the clearance of a large portion of the items always recognised as charges against the general funds of the colony: and after deducting those items which must be paid, nothing is left to effectuate the local objects contemplated in the ordinance.

A few alterations, however, have been made, which deserve approbation: parents and guardians of persons under age, and heirs and executors, or administrators of deceased persons, are charged with the payment of the rate. (Clause XLIII.) Auditors are elected annually, in and for each ward, whose duty it is to examine and audit the accounts of the wardens, for the year immediately preceding. (Clauses LVI. and LXI.) The wardens are also to send in, annually, an estimate of the probable revenue and expenditure of the wards for the ensuing year, with the assessment to be levied for meeting the expenditure. (Clause LXII.) On the other hand, the governor is to determine the rate, and hitherto he has exercised his power of control by increasing, never by reducing the amount. The wording and the spirit, or essence of the thirty-first clause, has also been altered; and "the rate is now to be "paid in respect of the dwelling-house and any house or building "which may be let, or used as a shop, or which may be let out "for rent on all *cultivated* and *pasture lands*," instead of "on all "*sugar*, *cacao*, *coffee*, or *cotton estates*," as in the first ordinance: this may be called a *sham* amendment. The last change, namely, the formation of ward unions, has, in my opinion, greatly complicated the *already* complicated machinery of the Territorial Ordinance, whilst but little confidence is placed in the ultimate success of those changes. I feel, therefore, at liberty on this point, to offer a few suggestions; they are based on a division of the functions now performed by the wardens.

In all countries, the constitution and management of public roads and bridges are intrusted to men possessing special qualifications, and are considered as belonging to the highest branch of Civil Engineering. Here, all of the respectable class, whether lawyers, artists, or agriculturists, are regarded as eligible to give an opinion on, or to prepare directions for the making of roads and the construction of bridges. If it were an assumption of

competency on the part of those who exercise it, I would call it most preposterous; but it appears to me to have arisen from a misconceived idea. Men possessed of the special knowledge required for the duty, ought to be intrusted with the management and inspection of public roads; and, as an instance of what such men can do in this department, I will only mention the results obtained in the County of Victoria, by Sylvestre Devenish, Esq., land surveyor, and holding the office of inspector of roads, in the southern division. It may safely be affirmed, that, before Mr. Devenish was appointed to the inspectorship, there existed no *roads* in the Naparimas, inasmuch as the communications were impassable during the whole of the wet season; whereas good wheel-roads have now been formed throughout nearly the whole district.

I consider also that the collection of taxes ought to form a distinct department, the wardens being simply and solely the administrators of the wards; I therefore suggest, as a change, the adoption of the following plan:—Of what now forms one undivided administration, I would make three distinct departments; the management of the roads should be intrusted to qualified inspectors or surveyors; the collection of the funds of the wards to local receivers; and the administration to unpaid wardens, aided by, at least, two assessors.

Two inspectors of roads might be appointed; one for the northern, and the other for the southern division, at a salary of £600 sterling per annum, without any extra allowance. It would be their duty to visit and inspect the roads in their respective divisions; to prepare estimates for the repair of existing roads and bridges, as also for the making and construction of new ones; they would have charge of the construction of all bridges; would inspect the work done on roads, and deliver certificates for payment, on approval of the work performed.

One of their first acts should be to prepare, together with the secretary of the central board of roads and the superintendent of public works, a code of rules and regulations for the management of the public roads. Four local receivers might be appointed, viz., two for the northern, and two for the southern division, at a salary of £500 sterling per annum, without other allowances; they, however, would be supplied with printed forms and books, and should enter office under security. They would keep the registry of holders of lands and houses, in their respective districts, and be

charged with the collection of all funds accruing to each ward, viz., the taxes, fines, licenses, &c.: also, with the payment, in the different wards, of all sums of money to be disbursed in the service of such, and would likewise prepare an estimate of the probable revenue of each.

Each ward could be formed into a municipality, for the purposes of general administration, with a warden and two or more assessors; their functions to be gratuitous. Every warden in his ward should be charged with the maintenance of the public peace, the protection of public property, and the security of the public health, by the removal of nuisances; with the prevention of *squatting;* and the passing of contracts for the repairs, or making of public roads; with the registration of births, deaths, and marriages, and the drawing out and revising of the jury lists, &c. In case the warden should be prevented from acting, by illness, absence, or otherwise, one of the assessors could act as deputy, so as always to insure some public officer's being on duty in the ward. The warden should be allowed a clerk who would act as registrar of the ward, and would receive—besides the fees attached to the office—£60 sterling per annum, as salary, with an allowance for stationery. Ward unions might be formed for attending to the requirements of roads. The wardens of the several wards thus formed into unions, to constitute a local board of roads. The revenues from tolls should be applied to general purposes in the union, or unions to which they are attached,—for instance, to the building of bridges; whereas few, or perhaps no wards could individually incur the expenses of their construction.

This, or a like system of administration would, I believe, work more satisfactorily than the present, especially if the different branches were made co-ordinate and subordinate in a well planned system; it would also prove more economical, in the end, as does everything which is properly regulated. There exists, at present, nine unions: the salary of each warden may be estimated at £348 sterling. The two surveyors and four receivers would cost £3,200; the forty-three clerks of wardens about £2,600; total, £5,800—making an increase in the new system of £2,600 sterling. I have no doubt this difference would be more than balanced by the saving resulting from a better management of the public roads alone; but, in addition, should some of the items now charged against the wards be transferred to the general funds—as they

ought to be—there would then be a large margin for reduction of taxes and for permanent improvements.

I am perfectly aware that this review of the Territorial Ordinance may appear, to many, not only too lengthy, but the suggestions therein contained, highly *Utopian*. I doubt not my views will be met with indiscriminate opposition in the colony; not only because the opinions expressed are at variance with those hitherto received and followed here—and generally in British communities elsewhere—but inasmuch also, as the proposed alterations would probably invade private interests. And yet, our community is composed of such elements, as that—although the municipal institutions of Great Britain cannot suit our circumstances—something different from what now exists should be adopted: as matters stand, governmental agents have the irresponsible management of everything, and consequently nearly everything is mismanaged. It is the duty of government to encourage the diffusion of primary instruction, and the knowledge of the English language, in this colony; but, I believe I have satisfactorily proved that this will never be obtained under the present system. It is essential that we should have good wheel roads; and these we shall never have, unless they are placed under the management of men possessed of the necessary qualifications for the duty. The people in the *rural* districts are not, perhaps, fitted for *municipal* government; and yet, it is highly important that they should be gradually initiated into its operation. The plan I suggest, is, I conceive, the best adapted to such initiation: it bears some resemblance to the French system of *communal administration*, which has been introduced into the emancipated French colonies, and which seems to work to the satisfaction of all. In case, however, the government should insist on retaining the guardianship of the rural districts, let it, at least, act as a faithful curator, and not only administer its wards' estates to the best possible advantage, but also afford its protection against the frauds which may be practised against them, or the rashness of indifferent or partial trustees. Let it secure the respect and submission of its *administrés*, by exhibiting a really paternal care and attention, not only to their physical, but also to their moral interests; so that, when they are released from tutelage, they may find no cause for disparaging comparisons. The warden ordinance may be said to have been Lord Harris'

favourite measure; and, in fact, from its prudent and judicious enforcement, much permanent and practical good might have ensued: it is, certainly, the most important measure passed under his lordship's government. The next in point of significance was the Immigration Ordinance; and, in treating this subject, I feel but little apprehension of meeting with the objections which will be urged against my opinions on the Territorial Ordinance.

Demerara, Trinidad, and Jamaica, are the three British colonies, in these regions, which particularly need population, and to which immigration is a matter of vital importance; they are also the three colonies which have made the greatest efforts, and the greatest sacrifices towards the introduction of immigrants. Demerara and Trinidad have been so far successful, that the quantity of sugar they now produce equals, or even exceeds, the average exported before the emancipation; and it must be granted that the introduction of immigrants, and of Coolies particularly, has preserved the cane cultivation in these colonies from complete abandonment: the latter form, at present, the great body of working labourers on sugar estates. But as part of that population gradually retires from field labour—either by leaving the island to return home, or by adopting other occupations—it becomes imperative to make provision for a continuous influx of labourers, lest the cultivation of our staple article should diminish to a large extent, or should even almost entirely cease. The necessity which is still felt of introducing a further supply of immigrants, after nearly 30,000 have been already imported, must have been still more urgent, immediately after the emancipation: it had, in fact, become to us the great and vital question, the paramount "*to be or not to be.*" Of course, all sorts of immigrants were at first welcomed; and, as a consequence, much private and public money was squandered in importing worse than worthless individuals.

Immediately after emancipation, so pressing had become the demand for agricultural labourers, in consequence of our scanty population, and the preposterously high wages paid for field labour; so palpable, so imminent, had become the danger of ruin, that it was—at once and almost instinctively—resolved to call in immigrants by every mode of inducement. Immigration was, at the commencement, carried on by private individuals; but the losses incurred by those who had made the attempt, soon put a stop to

the system: the government was then strongly urged to take a share in the expenses; and immigration thus became "a public enterprise at the general expense."

Labourers from the neighbouring colonies, attracted hither by the prospects of higher wages, began to emigrate to the island at their own cost, but they soon found that the planters were ready to advance the passage-money, only provided they would engage their services as a compensation. On the other hand, a bounty was offered to those captains of small trading vessels who should introduce them, on condition they would use their influence to engage the services of the immigrants to the party paying the bounty. Several planters, themselves owners of vessels, despatched them to Grenada, St. Christopher, or Nevis, to bring over labourers for the crop season; and on many occasions undertook to send them back to their country after that term of service. Moreover, money was invariably advanced to the immigrants, on the pretext of their requiring articles of food or clothing; but as there was no legal provision specifying the conditions of contract, or binding the immigrant and employer to their observance, many of the immigrants actually left, or were enticed to leave the estates whereon they had located; the planter who had paid for their passage and made advances, thus losing a part, or even the whole of the money advanced.

The Legislative Council having been induced to make the introduction of labourers a public enterprise, a "regular trade in immigrants" was established between Trinidad and the neighbouring islands, but especially with Grenada, Montserrat, Nevis, and St. Christopher. The captains who introduced them being entitled to a bounty, managed to bring over as many as possible; and, in order to keep up the trade, they were really known to take back the same people for whom they had received a premium on some former voyage, in order to have an opportunity of re-introducing them a second, or even a third or fourth time, thus converting the same individual immigrants into an *ad libitum* bounty. This infamous practice was carried on until, being detected, the bounty system was discontinued. Thus terminated the ill-contrived, and injudiciously managed inter-colonial immigration. The demand for labour, however, was still pressing, and our legislators concluded that the mere nominal increase of labourers would meet the want. A vessel anchored in the har-

bour and reported forty immigrants, the captain immediately received the specified bounty upon forty persons; but, of these, ten, perhaps, went to the cane fields, whilst thirty became street-walkers, wharf-loiterers, or midnight marauders. Vast sums were spent, and yet the distressing embarrassments of the planters were not in any way relieved. Now the simple enactment of some simple contract-law binding the immigrant to a stated period of service, might have obviated the evil; but neither here nor with the home government was it considered an easy affair. Such a law might certainly have diminished the number of immigrants, but the industrious labourer who sought to improve his circumstances in this colony, would certainly not have hesitated in engaging to perform what was to secure the aim and end of his expatriation.

Emigrants came also from Havre, Madeira, and the United States. Those from France were engaged either as house-servants or field-labourers; the former, after their term of service had expired, preferred a livelihood as shopkeepers, carters, or petty traffickers—only a few remain at present in the colony: the latter were carried off by fever. The immigrants from the States, an industrious and moral class, did not succeed much better, inasmuch as being, generally, carpenters, bricklayers, &c., they had to compete with the same class of tradesmen, already too numerous in the island. Emigrants from Madeira were more successful, and a few only have left the colony for the United States. The two sources, however, from which we have received the largest accession of labourers, are Africa and Hindostan. The home government had decided that the Africans, liberated from the captured slavers, should be sent to the West India colonies; and of these Trinidad received a large share. A few hundred voluntary emigrants came also from the Kroo-coast. It soon, however, became evident that we could not depend for any length of time on a supply of labourers from this source, and it was decided to follow the example of the Mauritius, and to introduce coolies from Hindostan. Accordingly the "Fattel Rosack" anchored in the harbour of Port-of-Spain, on the 30th of May, 1845, with the first cargo of coolies from Calcutta. The pressure must have been great indeed, to compel the colonists to seek labour from the far east; and such a determination certainly argues much in favour of the energy of the Trinidad planters. Other vessels followed

in succession, and in May, 1848, 5,162 coolies had been landed in the island. The two or three first imported drafts answered the expectations which had been formed, but the others did not, and for the following reasons:—they had not been judiciously selected, their introduction was a mere experiment, and as such surrounded with many difficulties; also, the coolies were perfect strangers in the island, and the relations in which they were placed with the emancipated blacks, quite novel. But no class of labourers has given more satisfaction than those subsequently sent by Mr. White, the agent of immigration for Demerara and Trinidad. True, the manner of dealing with them is now regulated by law, and far different from what it was at the commencement; added to which, their own country people are here to advise and to initiate them in the customs and occupations of the colony; in fact, they are less hampered in their own peculiar ideas and habits, and in consequence, work more successfully, because they fully understand their duties and their rights. A coolie magistrate, Major Fagan, who was acquainted with their language and customs, had been appointed for their special protection. When the major arrived in Trinidad, only a few inoperative regulations existed concerning emigrants of all classes; and, it was consequent to that want of proper regulations that so much suffering was undergone "by these unfortunate people in the shape of disease, starvation, and ultimate death."

Many of the Africans liberated from slavers, and who had been apportioned to the planters under certain conditions, viz., that they should work for a stated number of hours, every day, on being provided with lodging, food, clothing, and medical attendance, but who could not have understood what was meant, and considered themselves as no party to the contract—determinedly refused to work, and absconded into the woods, prowling about in the neighbourhood of plantations on which they ventured at night for plunder. Others attempted to retrace their steps to their country, as they imagined, by travelling eastward; not only did they carefully avoid inhabited localities, but when they did encounter any of the inhabitants, being ignorant of the language spoken in the island, they could neither understand, nor make themselves understood.

The coolies who had arrived in the interval, soon availed themselves of the bad example set to them, and of the laxity of the

law; the contracts made were broken, first by the indented labourer, and most willingly afterwards by his employer, who could in no wise consider himself bound, when the immigrant had freed himself from all obligations. Lord Harris having fully treated this subject in his correspondence with Lord Grey, I prefer giving his opinions, in his own words, to offering my own on the matter.

"My desire has been impartially to study the interests of both parties, at the same time never to lose sight of the fact, that the coolies are placed here under peculiar circumstances, as utter strangers in a foreign land, and therefore requiring the zealous and increasing care of Government: that they are, also, far from being the best class of the Indian labouring population; are naturally dissolute and depraved in their habits, if left to themselves, and much inclined to fall into habits of drinking and of wandering idle about the country, and therefore require the close supervision of Government, in order to correct, if possible, but at all events to prevent, any evident cases of vagabondage and licentiousness."—(Lord Harris to Mr. Gladstone, July, 1846.)

"After having given my best consideration to the subject, it appears to me that in the first place, the immigrants must pass through an initiatory process. They are not, neither coolies nor Africans, fit to be placed in a position which the labourers of civilised countries may at once occupy. They must be treated like children, and wayward ones too; the former, from their habits and religion; the latter, from the utterly savage state in which they arrive."—(Lord Harris to Earl Grey, February, 1848.)

Lord Harris, therefore, with the aid of Major Fagan, the coolie stipendiary magistrate, prepared a code of regulations which was published in 1846. A great outcry was raised here, and in England, against those regulations, some of which, on the assumption of His Lordship himself, "were stringent." These rules were disallowed by the Secretary of State for the colonies—Lord Grey, not only because, in his lordship's opinion, "they had no legal validity," but also and mainly, on the strong and certainly most injudicious representations of the *Anti-Slavery Society;* so that the system of *laissez aller* was, once more, preferred to a more restrictive, but surely, as proved by the result, a more beneficial and more humane policy. However, certain heads were, at the same time, sent out by Earl Grey, which were digested into an

ordinance, and passed, in 1847, for the encouragement of immigration.

Now, let us see the results from Lord Harris' despatches to Earl Grey.

"I cannot say that the ordinance, No. 9, 1847, for the encouragement of immigration, has succeeded to my satisfaction. The causes of its failure, I attribute, partly, to the very depressed circumstances of the planters at the time of its being brought into force, and *the general conviction that the coolies would not remain on the estates*, consequently inducing a small demand for the coolies; and partly to *its want of adaptation to the localities, and the population with which it was intended to deal.*"

"*Many of the coolies left the estates within a week of entering into contract*, but no pains were taken to give the Government any information of it."

"Want of means was one cause why contracts were not generally entered into by the planters."

"But there was also a general feeling that *the provisions of the ordinance were not sufficiently stringent to warrant their advancing the sum required.*"

"*That such has turned out to be the case there can be no doubt.* I shall proceed to explain why it appears to me that it was likely to happen."

"Your lordship will remember that the withdrawal of some rules which I had established, respecting the management of the coolies, was required by despatch, dated 15th September, 1846, and they were accordingly cancelled, on the 17th October, following."

"Doubtless there were numerous faults in those rules; from the circumstances of the case, they had been drawn up at a very short notice; *but, all will allow, who had the opportunity of judging, that during their operation, the coolies were healthy, well clothed, generally contented, and improving daily in habits of industry.*".

"On the withdrawal of those rules they returned to the habits which are natural to them: *they left the estates, and were to be seen wandering about the country in bands*, and by the time that the immigration ordinance came into force, *but few were remaining on the properties on which they had been generally located.*"

"I must now explain how the provisions of this ordinance did not serve to correct the evil. On entering into contract, the coolies were liable, on breaking their engagements, to certain

penalties. In order to enforce these, it was necessary, first, that the delinquents should be caught, and then brought before a justice of the peace."

"Now, *the great difficulty is, in this country, to get such penalties at all to bear upon the delinquents.*"

"The result has been, that I know of only *one instance in which the proprietor has attempted to recover the coolies.*"

"The consequence of their *re-adoption of their wandering habits has been most distressing. I was induced, from numbers being found destitute, sick, and starving in the roads,* to establish two hospitals for their reception."—(Lord Harris, February, 1848.)

I must remark, here, that had Mr. M. Martin been actuated by any feeling—I will not say of candour, but of impartiality, he would certainly have found in Lord Harris's despatches, a straightforward and natural explanation of His Lordships statement, that, "in no country had greater suffering been undergone, than by these unfortunate people, in the shape of disease, starvation, and ultimate death." But the writer had only one thing in view, viz., to insinuate that, in Trinidad, "the treatment of immigrants, generally, and especially of the East Indian coolies, had been most discreditable."—More still he could have found, in Earl Grey's answers to Lord Harris' observations, an admission that the fault was not that of the planters, but of the "*unrestrained liberty granted to savage or half civilised races.*"

"It is possible, indeed (says Earl Grey), that the code of coolie regulations proposed by you, might have been more successful than ordinance No. 9, of 1847; and the primary objection that I took to it, namely, that it had no legal validity, might have been obviated by the enactment of an ordinance. Such rules could not be enforced without a violation of the principles on which free labour is ordinarily regulated, nor without running the risk of great abuses. It is possible that the abuses would have occurred but seldom, and that *they would have been a far less evil than the vice and suffering on the part of the coolies, to which their unrestrained condition has given birth:* but, we have to bear in mind *the sentiments to which the exposure of even one gross example of abuse might give occasion here,* and the obstruction to all immigration which might be the consequence, not only in Trinidad, but throughout the Sugar Colonies; and I doubt not that your lordship will perceive the *serious difficulties under which we labour in the treat-*

ment of immigrants belonging to savage, or half civilised races, whose unfitness for unrestrained liberty is not generally understood or acknowledged in this country."—(Earl Grey to Lord Harris, 15th April, 1848.)

Indeed, the suffering of the immigrants are not attributable to the colonists but to the "unrestrained liberty granted to savage and half civilised races." Earl Grey writes again: "It is exceedingly painful to me to learn that the Immigration Ordinance, though seconded by your lordship's zealous efforts, and by the order for the prevention of vagrancy, passed by Her Majesty in Council, on the 7th September, 1838, and the proclamation for the preventing of squatting, issued by you on 22nd June, 1847, has been ineffectual, *and has not succeeded in preventing the coolies from falling into fatal and dissolute ways of life, so that great numbers of them have ended by dying in the public hospitals, and not a few, by the waysides and in the woods.*"—(Earl Grey to Lord Harris, 15th April, 1848.)

Regarding the principle laid down by the minister for the colonies, that it should be sought "to place the immigrants in a situation in which they might be acted upon by the same motives by which men are compelled to labour in industrious countries," Lord Harris offers the following very judicious remarks: "I have great doubts whether the coolie and the African are morally or mentally capable of being acted upon by the same motives, in this island, *on their first arrival*, as labourers are in more civilised countries." "The only independence which they would desire is idleness, according to their different tastes in the enjoyment of it. And then, the higher motives which actuate the European labourer (and we must remember the vast difference there is, even in Europe, with respect to the industry of various races), which are above and beyond circumstances irrespective of mere self-interest, which he has received as his patrimony from previous generations, and which, I believe, even in this age, are still to be found prevailing amongst them, viz., that to be industrious is a duty and a virtue; that to be independent in circumstances, whatever his station, raises a man in the moral scale, amongst his race; and, that his ability to perform his duties as a citizen, and, we may add, as a Christian, is increased by it. These, and such motives as these, are unknown to the fatalist worshippers of Mahomet and Brahma, and to the savages who go by the name of liberated Africans."

"A proof of this, and a marked difference, may be seen daily in the vicinity of Port-of-Spain. The Portuguese are chiefly settled in the town and its vicinity, as gardeners, &c.: their services are at a premium, their work is, on the whole, more valuable; they get higher wages than the African, the coolie, or the creole, so that their circumstances are at least as good—in fact better; for they live more economically."—(Lord Harris to Earl Grey, February, 1848.)

"The immigrant has been looked upon too much as a mere animal whose labour is valuable; whereas I would endeavour to make him eventually a useful colonist, an industrious and worthy citizen. *To attain this, he must be subjected to a discipline, and to education.* The provisions of that discipline must be directed, superintended, and enforced by the government in a colony like this. To leave it to the proprietor or manager, to whom the immigrant may be intrusted as a labourer, is probably rendering the plan nugatory; there are duties towards those under him which he is also ignorant of, and which he must be taught." This is impartial, noble, and independent language; and on such language full reliance ought to be placed, when it is supported by such opinions as are expressed in the following passage: "Though I fully and cordially agree with you in opinion, that the highest interests of the negroes require that the cultivation of sugar should not be abandoned, and that the proprietors of European race should be enabled to maintain their present place in the society of the colony, which can only be done by giving them a greater command of labour; yet I am hardly prepared to go so far as to say that we ought to place the labouring population in circumstances in which a greater amount of labour than at present shall be required to supply their wants. To do so is effectually to diminish their comfort and happiness; for I do not think it necessarily follows that the continued daily drudgery of labour improves the lower classes, either morally or physically, more especially in a climate in which the human frame is easily fatigued, and frequently prostrated."

The Immigration Ordinance of 1849 has been since amended, and, as it now stands, works to the satisfaction of all. A superintendent of emigrants has been appointed, with powers to transact all business connected with the immigrants, their indenture, registration, &c.: he acts also as their protector and

exercises a strict surveillance on behalf of the government. To the present superintendent of immigrants, Dr. H. Mitchell, great praise is due for the intelligent and conciliatory manner in which he conducts everything connected with the department, and for the zeal, activity, and impartiality with which he discharges his important and arduous duties: to him the Government is indebted for many useful suggestions. I may say that, under the operation of the present ordinance, the immigrants "are healthy, well clothed, and contented, improving in habits of industry." The industrious habits of the coolies particularly are manifested by instances of many of them, either remitting home, or taking with them on their return, after four or five years industrial residence, as much as 400 and 600 dollars—comparatively large sums of money. That they are contented is proved by the fact that, in the year 1852, 508 coolies engaged for one year's further industrial residence, on a bounty of ten dollars per head being granted. It is therefore certain and undeniable, that under the strict surveillance of government, coolie immigration has been highly successful, and that not only the colony, but they themselves, as proved by the above figures, have also benefited by their introduction, more particularly in the instance of the year 1854, when *all* those who were entitled to a return passage preferred remaining, and received the bounty. The climate seems well adapted to the coolie; he is not subject to yellow fever, and can encounter the marsh fever as well as the African himself. Anaimia and ulcers are their prevalent diseases; but these complaints are merely the result of improper food or filthy habits, and of protracted or neglected fevers. Their children are in general plump and lively. Let me reiterate, therefore, that coolie immigration, properly conducted, may yet aid in saving such of the islands as have fertile lands; nay, may be the foundation, in this archipelago, of industrial, peaceful, and happy communities, whose prosperous example may become a useful lesson to other classes of immigrants, and a powerful stimulus to the influx of foreign labour; for not only are the coolies a very intelligent race, but they are saving, industrious, well adapted to the climate, and highly susceptible of improvement.

In the month of March, 1853, 440 Chinese were landed in Port-of-Spain; but unfortunately they were unaccompanied by interpreters, and were, of course exposed to many sufferings from

their inability to understand, or to make themselves understood by their employers. Hence, incapable of making known any objections they would think reasonable, or any wish they might form, or of asking redress for any real or imaginary wrong they might have suffered, they, on many occasions—and doubtless through ignorance—resisted the just claims of their employers. Some of the indolent among them would simulate illness in order to escape the necessity of labour, and yet would exact, or expect the full allowance of food to which they were entitled in health. If I may judge of the Chinese from the few hundreds introduced lately, I must say they are proud, stubborn, and deceitful, bearing rebuke with impatience, and prone to revenge and suicide; they are also much addicted to stealing. On the other hand, they work hard, steadily, and well; in fact, they understand the tillage of the soil better than any other class of labourers we ever had, and they avail themselves of the smallest spot allowed them, on estates, to cultivate provisions. They are highly praised by some of the planters, as even the *best* class of labourers, and are easily acclimatised, though not so readily as the coolies. It cannot be denied that the first importation of the Chinese did not, at the outset, at least, succeed well, not being, I think, carefully selected: and we had, during the first months of their introduction, a repetition of the same difficulties which attended the initiation of the first imported coolies. These, however, were soon overcome by a rigid enforcement of the Immigration Ordinance, and the strict surveillance of the government; an interpreter has also arrived lately.

I have already stated my opinion regarding the best mode of conducting immigration into these islands; I have also stated from what sources we must look for labourers. Immigration from India and China has already been advantageously systematised, and there only requires to be organised that from the United States. This, in my opinion, cannot be done except by the intervention of the government, through its ambassador at Washington; and by the appointment of agents who would act in behalf of such of the colonies as may require immigrants, make arrangements with the different states, and superintend all matters connected with the acquisition of an industrial population from the Union.

But, from whatever source we obtain immigrants, I am of opinion that the risk and expenses of their introduction ought to

be left to those who actually require their services—the funds of the colony being pledged only as a security to parties who would introduce them; but, as a compensation for risk and expenses, the services of the immigrants should be secured to those who would incur and pay the same. The immigrant, however, should always be at liberty to free himself from all engagements on reimbursing the money advanced for his passage. But whereas the risks of acclimatisation are greater during the first year of residence, I think it would be but fair that a certain per centage on the passage-money should be reimbursed, as a compensation to any planter who would have first engaged the immigrant;—except, however, it were proved that the latter had been free of ailment during the time of his indenture.

In no case should the immigrant be granted a free return passage; for not only is the principle absurd in itself, but, as regards those islands, it implies a contradiction, since a pledge is thereby given to send back to their country the very people whose labour is so necessary, and for the importation of whom such heavy sacrifices are made; it is highly impolitic, since the return passage-money, together with any amount the immigrant may take back with him, is so much of the circulating specie abstracted from the colony. This is an evil much greater than it appears, or perhaps has ever been thought. The only reasonable pledge the colony should be expected to give, would be whenever a sufficient number of immigrants are found willing and ready to return home, to procure for them a vessel and a passage on the same terms as those on which they were introduced.

The home government should not herein interfere beyond a strict surveillance with regard to the arrangements of the immigrant vessels,—the selection of the vessels themselves and the amount to be paid for the passage, being left to the parties concerned. The introduction of each coolie costs the colony at present £14 sterling. The introduction of the same individual costs the inhabitants of Martinique 337 francs, or £13 sterling; and it is calculated that, in general, they could be imported here at the rate of £10 sterling per head—the contractor thereby realising a profitable return. Supposing two thousand to be introduced every year, it would make to the planter, or to the immigrant who should redeem his time, a difference of £4 ster-

ling, or 28 per cent., for each individual. The best ships for such voyages would evidently be clippers, since both the immigrants and the contractors would be gainers by a quick passage. Our present Immigration Ordinance could be easily adapted to meet the contingencies attaching to all classes of immigrants. I, however, deprecate any system of immigration whatever "that would end merely in supplying *the planters with cheap labour;*" such a system must tend to create misery, and to spread dissatisfaction. To produce permanent benefits, paid immigration should be coupled with other measures, having for aim and end the moral and physical welfare of the immigrants. This Lord Harris had in view, and I have much pleasure in being able to quote on this subject the disinterested opinion of a nobleman whom none will accuse of being inimical to the planting interest.

"There can be no doubt that the prosperity, nay, the existence of these colonies depends on a cheap and steady supply of labour; the favourable solution of free against slave labour must depend on it; every means ought to be tried, more especially on the part of the mother country, to obtain it on as cheap terms as possible; but the last means I would recommend to resort to, would be to pen in, as it were, the inhabitants of this island, so little fitted, as I have before shown, for any trial of the kind."

"To compete successfully with the slave grower, and to render free labour permanently remunerative in this climate, *much more is required than the temporary expedient of reducing wages by the introduction of coolies or Africans;* and, apart from mechanical appliances, *more reliance than heretofore must be placed in inculcating industrious and settled habits amongst the labourers*, who, so far from advancing in civilisation during the last two or three years, when affluence and comfort unknown to any other labouring population have been within their reach with little or no toil, have actually retrograded and evinced but little desire to accumulate wealth, affording but too good reason to fear that under adversity they would revert to a state of barbarism." (April, 1848.)

What that state of barbarism may be we may form a faint idea from the present condition of our population generally, and of the squatters in particular. The adversity which loomed in the future has, at last, reached its culminating point—the planter is

unable to pay high wages, the colony has been drained of an immense amount of specie in payment of alimentary articles imported from America, Venezuela, and other countries. The mass of the population are still inclined to articles of luxury and finery, but they do not appear to be concerned if they cannot procure them, and seem content to go about with any clothing consistent with decency; as to comfort, it is to them a matter of the greatest indifference. But, unfortunately, one of the saddest consequences of misery is to render its subject callous to his position and indifferent to immorality; he feels neither attraction towards virtue nor repulsion to vice; and the more wretched a population becomes, the more difficult is the task of inculcating habits of industry and virtue; so that the efforts necessary to regenerate an impoverished and degenerate community, must be greater in proportion as measures have been longer delayed, or as the enforcement of those adopted have been neglected. Stringent processes, for instance, have been issued against *squatting*, or the illegal occupation of crown lands; and yet, the squatters remain in the *statu quo* of undisturbed possession. Squatting, however, is an evil of much detriment, inasmuch as it exercises the most baneful influence on the morality of the people and the interests of the country, for a squatter is a man who violates the rights of property, and, to a certain extent, frees himself from the obligations which are imposed on the other members of the community.

In all civilised countries the rights of property are regarded as of a most important, essential, and sacred nature. I maintain, therefore, that squatting ought to be discountenanced by all means, for the inviolability of property must be respected, be it individual, in corporate bodies, or in the crown; and the rights to the soil must be vindicated on the same impartial scale. This can be effected but by the strong arm of the law. New measures might be adopted; an ordinance might be enacted, with provisions suited to the emergency of the case, and adequate to the repression of the evil. For instance, let the entering into possession, or the occupation of any portion of crown lands, after a given date, made known by proclamation in all the wards of the colony, be declared a misdemeanour, punishable by fine and imprisonment—the amount of each penalty to be increased on a repetition of the offence. Let strict injunctions be issued to the

wardens—after the delay granted has expired—formally to notify in writing, every person who may occupy crown lands in his ward, that, after a fixed date, proceedings will be instituted before the stipendiary magistrate of the district to impose a penalty for such illegal tenure. With zeal and vigilance on the part of the wardens, the Government might succeed in mitigating to a great extent, and ultimately in destroying, the immoral and pernicious system which has already exercised and, if effective measures be not taken, must continue to exercise, so baneful an influence on the general prospects of this colony, as well as on the physical and moral welfare of the squatters themselves. The great mass of these *unsettled* settlers is composed of Africans who, more than the other classes, require the lessons of civilisation and the watchful eye of the law. Now, how can this be obtained whilst the objects of this aim are leading a half-savage life on the outskirts of civilisation? Their dwellings are mere huts; their children are almost in a state of nature as to clothing, and so shy that they betake themselves to the bush around their retreats on the approach of strangers, particularly of those who may bear the marks of respectability. When the squatters are left undisturbed, they generally cultivate ground provisions, such as plantains, manioc, &c., and occasionally employ themselves in job-work on the neighbouring estates. They may be said to form, in each district, an association for mutual support, and generally manifest great distrust towards those who do not belong to this confraternity. This is, of itself, a great evil; for confiding in the strength of this bond, they have on more than one occasion threatened violence to those who should adopt legal steps against them, or, in any manner, disturb their security. On the other hand, the removal of squatters from one spot but scatters them over others more retired, and, to escape observation, their settlements are formed widely apart from one another. The new grounds they establish are rude and slovenly in respect of cultivation, the precarious nature of their tenure, and the dread of being again ejected, leading to the cultivation of such articles as yield quick returns. Their labour is, however, directed principally to the spoliation of the crown forests, in the burning of charcoal, and the destruction of all species of game, either for their own subsistence, or with a view to gain, by selling the same in the neighbourhood. It is but too evident that people leading such a

desultory life must "revert to a state of barbarism." It becomes, therefore, the imperative duty of the Government to combine effective measures for the speedy suppression of squatting; and yet the conduct of the executive is so anomalous that, on the contrary, as shown by the following observations, protection is virtually granted to this most nefarious practice. The Territorial Ordinance, in terms most positive, discountenances the unauthorised holding of public land, and instructs the wardens to use every exertion for suppressing the practice of squatting. In the teeth of this, squatters are called upon to send in returns of the lands they occupy, their possession being thus implicitly, and yet distinctly, recognised, by their lands being rated, and the rates thereon received, precisely on the same principle as that affecting other legal possessions. Is not this indirectly to connive at, or rather to countenance what the law condemns? It is urged that the wardens, not the government, are responsible for the non-execution of the ordinance. But the wardens of the wards so circumstanced answer, that there are several reasons for their being lax in the fulfilment of their duties in that respect. They represent that, although the local rates have been invariably charged at the *maximum* fixed under the Territorial Ordinance, many wards can barely meet their annual local expenditure; and that, where part of the funds of such wards is derived from the rates imposed on illegal holdings of lands, to reduce them by twenty, thirty, or even fifty per cent.—as the discontinuance of squatters' assessments would inevitably do—is to place those wards in a position of inability to defray their expenses.

This is evidently a serious consideration. Experience has proved, besides, that no advantage or compensation is derivable from the simple ejection of squatters, since they generally retire farther into the interior; whilst the number of those who, in consequence of such ejection, resort to estate-work is comparatively insignificant, though not so their example, forming as they generally do, a class of discontented, intractable, and troublesome labourers. Thus the benefit derived from the accession of these few malcontents is more than counterbalanced by the loss of job-labour they willingly perform, and by the discontinuance of provision-cultivation. In confirmation of this statement, I may mention the following case, which I borrow from very good authority. In one

of the most extensive wards of the island there exists an extent of several miles of uncultivated land, almost the whole of which is Crown property. In 1852, there were in this ward 280 registered and assessed holdings: of these, ten were estates; about sixty were lots purchased from the Crown, or from private individuals; and the remainder, 210 tenements, formed by squatters. The assessment rate for that year, on these holdings, amounted to 2,800 dollars. Of this amount, the estates were charged—1,500 dollars; the small proprietors under legal tenure—160 dollars; unauthorised holdings—1,140 dollars. Total—2,000 dollars.

In the course of the following year, a portion of the lands occupied by the squatters having been ascertained, under survey, to belong to the estates of the ward, a considerable number of those illegal occupants were dispossessed, though not without resistance on their part. As, however, the lands in question were not in request by the proprietors, it was left to the option of these *freemen of the soil* to continue their possession on payment of a trifling rent; but, to a man, they quitted their occupations, and retired into the interior of the immense tract of forest-land which lay open to them, and their casual services were thus lost to the estates. Shortly afterwards, claims were preferred to another tract, which had theretofore been considered as Crown-land: legal proceedings were instituted, and a similar result ensued. Now, the ground-provisions produced by these squatters supplied, at a very moderate rate, the wants of the ward, and even left a considerable surplus for the accommodation and consumption of the neighbouring district. In the year 1854, plantains, corn, and other provisions were imported to supply the deficiency, and the revenue of the ward decreased from 2,800 dollars to 2,000 dollars; so that the immediate result of the removal of those squatters was a diminution, both in the growth of provisions and in the revenue of the ward. Neither did they seek employment on estates, as some would have anticipated, but were scattered over a greater extent of country, in a condition near akin to nomadic, whilst the district was minus their previous industrial exertions; for, the warning from the Government agents, as to the illegality of their holdings, and the fear of other disturbances in their haunts, created a feeling of insecurity, which led to more partial and slovenly cultivation, realisable within short periods, or to some desultory occupation, more particularly the preparation of charcoal. Had these people been

afforded an opportunity of becoming proprietors, on a small scale, by the purchase of Crown-land, in convenient localities, they would probably have become useful members of society. In case, however, all other measures being taken, they should choose to persist in their illegal practices, I then would not hesitate to recommend hard labour, in addition to imprisonment, for repeated offences. For not only is squatting an usurpation of the rights of property, but it evidently tends to create in individuals a disposition to insubordination, and to the nurture of savage dispositions; and it may be affirmed, with certainty, that in all countries where squatting prevails, squatters form a dangerous class.

It would be a work of supererogation to offer remarks on the benefits resulting from the diffusion of education. I shall therefore merely remark, that it is particularly necessary in countries where the great mass of the people have been kept for years under the debasing system of slavery, and where, as a consequence, gross and wide-spread ignorance prevails. I am aware of the opinion entertained by many, that any encouragement held forth to the march of lower-class intellect, creates in the people a spirit of false independence; and that youths, who have acquired the elementary branches of learning, such as reading, writing, and arithmetic, will scorn the idea of labour in the cane-fields. This will be the case as long as primary instruction is the privilege of a minority; but, when it becomes general, and is coupled with other administrative measures, the dreaded evil will gradually disappear, and the beneficial results be then felt; for in lieu of the unintelligent and unskilful hands we are constrained to employ, as at present, in the tillage of the soil, we shall then have to deal with intelligent and skilful agents. I, therefore, consider the establishment of a sound system of public instruction as a paramount regenerative measure, and not to be forestalled by any other that can be suggested. In the year 1851 Lord Harris proposed the introduction of such a system, and gave preference to that of the Irish National Board of Education. Secular instruction only is afforded at these schools, and the parents and guardians, with the aid of the clergy, have the responsibility of providing religious teaching for the children. To this plan I cannot deny the advantage of not directly interfering with the religious training of the pupils; but this is its sole advantage, and one which is, in my opinion, more than counterbalanced by its capital defects. It has been said that infi-

delity must be the result of a purely secular education, and this statement has been supported by persons the most competent to form a judgment in the matter, viz., by the clergy and by men eminent for their piety. The fact is, that the system of purely secular education involves, on the part of the State, complete indifference in matters of religion—a principle which, I dare affirm, is antagonistic to the very spirit of Christianity; and I contend that this indifference proclaimed by the State, contrasted with its zeal for the propagation of secular education, must necessarily tend to create a correspondent feeling in the population. Objectionable as the principle is, it becomes particularly so under certain circumstances, viz., when no dependence can be placed—as is the case in Trinidad—on ignorant and indifferent parents, or an inadequate clergy. Now, the question arises, ought the Government to assume the charge of bestowing religious instruction on the children of public schools? Evidently not, except, however, where the entirety, or at least, an immense majority of the people should prove to be of the same creed; but such a pretension would become the most cruel tyranny, where there exists, as in this island, a marked diversity of persuasions. I consider it, however, to be the right, as well as the duty of the Government, to make provision for the religious instruction of youth, without interfering, nevertheless, with the religious tenets in which pupils may have been reared. Various plans may be devised for carrying out this active neutrality: first, by setting apart a day in the week, on which the pupils would be taught by the ministers of their respective denominations; secondly, by appointing certain hours or class-days, in or on which those belonging to the same persuasion would be assembled in some convenient room within the school-premises, there to be privately instructed by their ministers; thirdly, by selecting a day in the week when, after school hours, the pupils of each denomination could be drafted off, under the conduct of their monitors, to the place of meeting designated by the minister for religious instruction; fourthly, by granting to each denomination, in proportion to the number of its members, a certain sum for educational purposes, it being imperative on each to bestow a secular as well as a religious education. The first plan is that which is followed here, and I am bound to confess it has not answered; for the following obvious reasons:—indifference in the minds of parents, reluctance on the part of children, and

lukewarmness on the side of the clergy. This might be obviated by the intervention of the government, and the adoption of some simple regulations. But the government has already refused, on the pretext that it would be interfering with the free action of the children. The third plan must, I conceive, to all impartial men, appear free from objection; so with the second, which would also possess, in our climate, this advantage: it will be easier always, for a zealous clergyman at least, to ride to the school-house, than for twenty or twenty-five young children to walk a long way, through rain, mud, or mire—as the case may be—to the minister's residence, or to the parish church or chapel. But it is said this would be assisting in teaching and upholding *the errors of popery*, and the heretical doctrines of dissenters; and this the government cannot do. With all due deference to the "*powers that be*," this narrow-minded and illiberal pretext deserves no other appellation than that of *humbug;* for all true followers of Christ ought to find greater objections to the fact of children living, and being reared, in licentiousness and infidelity, than under the tutelage of evangelical law. Now, against the last proposed plan, I cannot discover what objections can be urged; except, however, the murmurings of jealous sectarians, who consider themselves entitled to all imaginable and unimaginable kinds of favours. The operative detail should be this: a strict surveillance of the Government regarding the course of studies and the qualifications of the teachers; none should be appointed to that office except on producing a certificate of qualification from the Board of Education; the course of studies should also be determined in a programme published by the same authority. The schools to be subject to the supervision of an Inspector of Schools. An educational fund should be vested under this system, and a proportionate sum granted to each denomination. A school committee, composed of laymen and ministers, should be formed by each denomination, and the educational funds holden by them in trust: competition would thus be created and a worthy emulation fostered.

Connected with this most important subject, are the two following questions:—should education be made compulsory? should it be gratuitous? As far as my private opinion goes, education *should* be made compulsory, as in Austria, Prussia, and elsewhere. The amount of ignorance is so great in the colony, and it is of such paramount necessity that it should be removed

as completely and as promptly as possible, that even compulsion should be resorted to for the attainment of that most desirable object. But if education be rendered compulsory, it evidently must also be gratuitous: even where its reception may be purely optional, I still consider that instruction to the million should be free of all charge, since such charge must tend to check its diffusion. But the course of instruction would in this case be limited strictly to reading, writing, and the four simple rules of arithmetic: should parents ask for a more comprehensive educational course, they should then be liable for a moderate payment.

At the time of emancipation, and as late as the year 1845, the Spanish law of inheritance was the law of the land: by that law, the children, legitimate or illegitimate, had a proportionate share in their parents' estate, and the latter could discretionally dispose of only a part of such estate. That law was replaced by the English jurisprudence on the subject. The English statute, however—coupled even with a prospective operation—was certainly pregnant with injustice, as applied to the peculiar circumstances of this community. But, with a retroactive effect, it was the height of inhumanity; for, it must have been foreseen that, with respect to the great majority, the saving provisions of the Ordinance could not have been made available.

The period of three months allowed for compliance with its requirements, was but a blind—a refinement in deception. Absence of parties, the death of one of the parents, subsequent connections, and a variety of other causes incidental to a benighted class, as yet unconscious of the immoralities of slavery, must have conspired to render impossible the union of parents; and the sentence of disinheritance, in all cases—that is, in the majority of cases—was therefore inhumanely pronounced by law against a host of children, who here found themselves in that position. Was it the fault of those children, or that of their parents? or, was it not rather the fault of the social institutions under which they had already suffered so many wrongs? A law protective of their rights had indeed existed, but had been abolished; and yet, both equity and humanity exacted that, had it *never* even existed, it *ought* to have been established. I am aware that the following reason is given in extenuation, viz., that on many occasions, unexpected claims would have been preferred against parties, and that such a position of affairs was a serious check to commercial transactions;

whilst the introduction of the English law at once removed all obstacles. I leave it to impartial men to decide whether this was a sufficient reason for altering the law, by attaching thereunto a retroactive effect.

I have been induced to make the above observations for the purpose of showing how our laws were, and are executed; and also that several have been introduced without reference to the circumstances of the colony, or the requirements of the community. I shall now proceed a little further, and suggest the adoption of measures which I consider not only useful but absolutely essential —either as preventive enactments, or as corrective of, or with a view to the correction of existing evils. Amongst others a stringent Vagrant Act, with proper regulations for carrying it into effect, and also a law of apprenticeship, are of paramount importance.

In a country like ours, where there are no skilful artisans, where parents have a strong inclination to withdraw their children from the culture of the soil, and to engage them in trade,—it is evident that a law of apprenticeship becomes a matter of vast importance. Such a law ought to be passed immediately, and its provisions made coercive and binding, as also the regulations which would accompany it. It would effectually be a guarantee to the apprentice himself, as well as to the master and the community at large. In no country, perhaps, does there exist a larger number of would-be carpenters, masons, tailors, &c., than in Trinidad; but in no country of the same extent, is to be found a less number of artisans, *really* acquainted with their trade.

The number of vagrants, in Trinidad, is beyond all proportion to the population, and the means of subsistence afforded. I call vagrants—those idlers, who, with not even an ostensible occupation, can have no reliable source of maintenance; but strolling about, in rags or filthy clothing, are constantly on the alert to procure, by any means, but especially by that of theft, the necessaries of life—a class that, by bad example and immoral habits, are a pest to society, and a burden on the community. If vagabondage were always a consequence of competition in the field of labour, evidently there ought to be no vagrants in Trinidad; but, as it is principally the consequence of idle dispositions and habits, vagrancy flourishes in all parts of the island. And yet, these canker-worms are left undisturbed; they enjoy full liberty, and,

of course, their number is daily on the increase. This is a question which has never yet obtained its due appreciation, but to which I am anxious, in these limited pages, to call public attention, as also to draw to the subject the consideration of men free from prejudice, and disposed to listen to the suggestions of truth and justice.

In civilised societies all men are bound to contribute their quota to the necessities of the state, in order to enable the government to afford that protection which civil and social institutions demand:—the man of capital, his resources; the man of art, his skill; the proprietor of the soil, his produce; the tiller of the ground, his labour. In addition, all are bound so to employ their faculties and exert their energies, that they shall neither become a helpless charge on the state, a burden to their fellow citizens, or indolently and criminally live at the expense of the commonwealth. Now, I am not aware on what principle it can be assumed, that the people of these colonies should be made exceptions to this common rule. The liberty granted by Parliament to the slaves was certainly not the natural unrestrained liberty of the savage, but that civil liberty which permits no man to do what can be injurious to his neighbour. The man who possesses not an income, an independent freehold, or a rent-roll, must labour in accordance with his ordinary avocation. The artisan must work, the tiller of the soil must toil; if he works not, if he toils not, want and distress must inevitably be his companions. Food he must have; true he may obtain it on credit, but with a detriment to the community, by non-payment; if not attainable on this wise, he must steal. In both cases, the gaol must be his resting-place, either under a civil process, or under a penal conviction; in either case, this man becomes a charge on the public revenue,—that is, the other members of his society are called upon to contribute to his support in confinement, after his having, whilst at liberty, taxed their property by dishonesty. Besides, is he not responsible for the bad example he sets to others, and to his own family, if he have any? is he not responsible for the special neglect manifested towards the physical comfort and moral training of the latter? It is not in equity that such drones should be permitted in the hive of social industry; and the state is justified in interfering and checking their depredations. Why should some toil, and others be allowed, with no claim whatever, to enjoy and consume the fruits

of their industry? Let all be placed under that same injunction, which derives its solemnity, its sacred character, from the Creator himself, who, in his economy of providence, has formed no exceptive class privileged as "*Fruges consumere nati.*" The interests of all men, living in society, are identified, and the advantages derived by one portion of the community redound, by a reciprocity of action, to the profit of another, and, in course of circulation, will promote the prosperity of the aggregate whole. Let the aversion to field-labour, and particularly to cane cultivation, be neutralised by a compulsion to labour, not in this or that particular branch of industry, but in some mode of profitable pursuit, every industrial effort will then be for the benefit of all, and particularly of those who are not possessed of sufficient intelligence or judgment to control their naturally wayward inclinations. Let us keep in view that idleness produces all the infractions of the civil law, and then a Vagrant Act will be regarded as one of the wisest measures which can be enforced in a civilised country—particularly where the climate is an inducement to the "*dolce far niente*" of indolence. Such an act exists in the mother country, and is rigidly maintained: why is it not so here? In the year 1838, an Order in Council was transmitted to the government, authorising the introduction of regulations of the same nature; but the English Act was never put into force. Now, although our customs and institutions, in general, are dissimilar to those of England, yet are not the results of idleness as bad, and even worse, in Trinidad than in England? Undoubtedly: therefore we require some such regulations as those comprised within the Vagrant Act. That such regulations may be enforced and be rendered beneficial, the example of the French colonies is a telling proof. Let every member of this community be bound to exercise some industrial avocation, each according to his taste, station, and circumstances in life; let there be no restriction, no impediment, no partiality for any particular interest, or branch of interest; but, let the Act come forth invested with plenary authority, and armed with all compulsory penalties to enforce its requirements, viz:—That, to some branch of useful industry, every man's time *shall* be devoted. To what cause, principally, is to be ascribed the neglect of, and even aversion to, the growth of provisions?—To the system of plunder which is organised in the rural districts. And by whom?—Evidently, by the "*far niente*" class of vagrants. I have

already alluded to the necessity of framing stringent laws for the protection of agricultural interests: such laws are particularly needed in Trinidad. Corn and plantains are carried off ere ripe; yams and potatoes are carefully dug out, during the night, almost within sight of the proprietor's dwelling; fowls are picked up with an audacity which calls to mind the sleight-of-hand of the Parisian and London pickpockets. As a consequence, the cultivation of provisions is abandoned, and fowls are truly *rarœ aves*, in the poultry-yard at least. This is the case in the Naparimas: the labourers live almost entirely on imported food, and thus depend altogether upon money-wages for their subsistence. It is clear that, under such circumstances, some coercive measure should be adopted: let the law make the stealing of an ear of corn, of a bunch of plantains, of a yam or potato, punishable with imprisonment and hard labour; and the severity of the punishment will then, perhaps, place a check on that system of plunder. The matter is at least worth the consideration of our legislators.

Their attention I would also call to the necessity of imposing a licence fee on shopkeeping. Not only is this a legitimate source of revenue, but I contend that such a measure will act as a protection to the *bonâ fide* trader, in whatever situation he may be placed; and, by increasing the revenue, it would afford an opportunity for relieving landed property from the heavy taxation it now bears. Such a tax has all the advantages of both direct and indirect taxation.

Agriculture, I reiterate, is the mainstay, the foundation of our social fabric, and therefore calls for the fostering care and protection of the state. Mechanics' Institutions are supported by the public for the instruction and improvement of artisans; apprenticeship laws are enforced for securing competent masons, carpenters, shoe-makers, or other tradesmen; and why, in a country strictly agricultural, should not public establishments be formed with a view to teaching the elements of agricultural science, together with the art of husbandry? The tillage of the soil is, generally, regarded as the province of the ignorant. This is a prejudice, and one which must have an injurious reaction on the success of agricultural pursuits. To be well conducted, no operation, perhaps, requires more practical knowledge; or more information, to be improved. This prejudice probably owes its origin to the following circumstance:—the growth of plants is the result of the combined

action of natural agents, and not of any mechanical appliance. If the intervention of man had not for effect to favour the action of those agents, then the ignorant matter-of-fact ploughman would, evidently, be as good a husbandman as the well-informed and skilful economist; and, of all occupations, agriculture would be the simplest and the easiest. But this is not the case: for agriculture consists in combining a series of operations, so as to obtain, from a given quantity of land, the largest possible return at the lowest possible cost. I would call *planting* the mere procedure of replacing by useful vegetables the natural growth of wild plants, the word *planter* expressing, in this case, pretty exactly the state of agriculture in these colonies. "A youth," says Mr. A. Anderson (in his Essay on Cane Cultivation), "is taken from a store, and placed on an estate, as an overseer; and, as soon as he is found to possess intelligence and probity, he is invested with a management; or, if he be of mature age, he is inducted, at once, into a management, without undergoing any probation. It takes years of apprenticeship to make a tailor or shoemaker; but, in Trinidad, a planter is made in a day." What Mr. Anderson has said of the sugar planter is *à fortiori* applicable to all others, but particularly to the provision grower. The sugar planter commonly possesses a certain amount of information; the provision grower is, in the majority of cases, an emancipated slave, or a liberated African. He cuts down the high wood, or copse, at a certain period, clears the land by burning, and then negligently plants the seeds of his corn, in holes made with the point of the cutlass; or lays his manioc cutting or plantain slip, in openings made by one or more strokes of the hoe: the provision ground is weeded once or twice, and, in time, under God's providence, the crop arrives at maturity. If a good crop be obtained, he is considered skilful; if not, the fault is that of the weather, or the land. And yet, it is well known that an acre of indifferent soil, properly and carefully cultivated, will yield as much as 15,000lbs. of yams, whilst the same extent of good land, ill planted and managed, will yield perhaps but one half that quantity. Of this, however, the great majority of cultivators are not convinced, because, in their opinion, nature is the sole agent of production; and unless they have satisfactory proofs that care, skill, and industry can effectually aid and second nature in her operations, they will never devote to the cultivation of their properties that attention and perseverance which are the instruments of success. Of what I advance there is a

striking proof in the production of Guinea-grass. This fodder is extensively cultivated in the neighbourhood of Port-of-Spain, and its culture is, in general, methodically pursued: the field is carefully prepared, manure applied whenever procurable, and the whole regularly weeded. Now, why is the cultivation of Guinea-grass better conducted?—Because it gives a quick return and in constant succession; because the sale of it gives daily bread. On the other hand, corn, plantains, yams, and other roots require four, six, and even twelve months to reach maturity; and besides, these all—except plantains—yield but one crop, so that the provision grower is obliged to wait four, six, and twelve months, ere his labour becomes remunerative; and he must, also, replant after the crop has been taken off. Now, in case his land has been under cultivation for years, and has become exhausted, the provision grower gets but a poor return: but he knows of only one method for restoring to it some of its former fertility—to leave it fallow. Did he possess experience and theoretical knowledge, he could obtain from his field, by proper management, all sorts and successions of crops in greater or less abundance. In agriculture, as in commerce, skill and industry are capital vested at a high rate of interest: but, in agriculture as in commerce, none become skilful except by proper training; in both, teaching is necessary, and in both, the result of teaching is too apparent to be denied. Exhausted land, judiciously treated, may give as good, nay, better returns and larger profits than virgin soil thriftlessly laboured; whilst, under injudicious management, the richest soil may soon become exhausted. Of these axioms, all our small proprietors are thoroughly ignorant; neither will they acquire sounder views, unless they are instructed to that end.

I have no doubt that, should the available amount of labour now existing in the colony be judiciously directed and properly employed, there would be, not only a sufficient supply of all the necessaries of life; but there would also remain a surplus, applicable to the cultivation of the staples. It is therefore evident that any measure which would tend to afford practical experience and theoretical knowledge, must be beneficial. It is, I believe, again evident that this object can be obtained only by the establishment of model farms or estates, whereon the cultivation, not only of the staples, but of all the alimentary articles, should be conducted according to the most approved methods.

It is more than probable that many who now hesitate to devote time and attention to the culture of provisions, or who consider such occupation as ruinous, and therefore not worth the attempt, would gladly resort to it, if it were satisfactorily proved by authentic data, that the raising of provisions is as profitable, perhaps more so, on a proportionably smaller scale, than the cultivation of the grand staples. The cultivation of the sugar-cane and other plants, as also the manufacture of sugar itself, would be improved, and all the branches of our agricultural industry would undoubtedly benefit by the establishment of model estates: also by dispelling the prejudice that has given birth to, and still nourishes, the aversion to agricultural occupations, that aversion would gradually diminish, and agriculture would rise in public opinion to the height its importance demands.

I therefore suggest the establishment of two such model estates; one for the northern, and the other for the southern division of the island. To that most important object the council might apply part of the loan granted by the Home Government, for public purposes: in my opinion, a better use of it could not be made. To the agricultural establishment of Hoffwil, formed and conducted by that distinguished philanthropist, Mr. de Fellenberg, Switzerland owes its progress in the art of husbandry. To the model farms of Roville and Grignon, France is greatly indebted for the advance she has lately made, and the position she now occupies as an agricultural country. I have known young gentlemen of rank, fortune, and education, spending months at Roville, under the tuition of M. Mathieu de Dombasle, in order to acquire sound information on agricultural chemistry, and a practical knowledge of farming operations, which they afterwards successfully applied in the conduct of their own properties. Our model estates might be based on a plan submitted by me to His Excellency, Lord Harris, in the year 1849, and the details of which are exposed in the appendix. In the event of their being constituted on a proper footing, the advantages which could not fail to accrue to the colony at large, cannot be easily calculated; and the benefit to individuals would soon become apparent in an improved husbandry and larger revenue. Such establishments could easily be made self-supporting; and I have no doubt that, under proper management, they would repay the original outlay in a short time.

The tillage of the soil ought to receive the largest share of encouragement; to this subject I cannot too often recur: and yet, excepting the cultivation of the sugar-cane, all other growths are discouraged, particularly by the heavy ward-rates; whilst, on the other hand, an immense number of individuals are allowed to resort to petty trade, free from taxation, or to shift at pleasure from one place to another, almost everywhere leaving behind them the dupes of their frauds among the credulous. And yet, upon the success of agricultural pursuits, and the tendency of the labouring population towards those pursuits, depends the prosperity of every class—not of the hired labourer only, but of the artisan, of professional men, and of the mercantile body; their profits must be in proportion with those of the cultivators of the soil. Encouragement given to the growth of provisions and the rearing of live stock, would tend to retain in the colony a large amount of specie annually. We pay to foreign markets for fresh meat and other articles of food, the enormous sum of £121,000 sterling per annum, and of that sum we could save at least £40,000 sterling, by only producing our own corn, rice, plantains, yams, &c., and by rearing our own domestic animals of all kinds. True, part of the tribute money we pay to Venezuela, and for cattle particularly, remains in the colony, as remittances for merchandise purchased; but, it cannot be regarded as an accession to the island capital, since it is paid over to our merchants, who generally return home after a greater or less number of years, with whatever amount of fortune they may have accumulated.

Much has been said on the importance of a resident proprietary, and the beneficial influence such a body must exercise on the prosperity of these colonies. I concur, heart and soul, in all that has been said on this subject: yet, at the same time, I cannot shut my eyes against the fact that rich proprietors will always feel a strong inclination to spend a part, if not the whole, of their time and revenue in Europe, which offers so many attractions to the educated and the wealthy. But the small proprietor must, of necessity, become a fixture in the island, there accumulating his savings and concentrating his affections. Those who are already possessed of a small capital, those who would emigrate to the colony at their own expense, and, finally, imported emigrants who might have made money by persevering industry, would evidently form the best foundation of an industrious class of small proprietors.

Lord Harris must have contemplated the realisation of that object, as appears by his despatches to Earl Grey; but he, at the same time, must have shrunk from the undertaking, on the consideration that all the energies of the government ought primarily to be devoted to saving the cane cultivation from ruin. Moreover, had he made any attempt at realising his views, he would have been encountered at once by a host of objections which the sale of Crown-lands will always suggest to those who have but one sole object in view—the extension of cane cultivation. I have said enough, I believe, on the vital importance of that branch of our agriculture, to exculpate myself from the accusation which I anticipate—that of sacrificing the planting interest to inferior speculations; but even such a censure cannot prevent me from calling attention to what I am convinced is a serious mistake. Under present circumstances, we *must* encourage the production of articles other than sugar; inasmuch as, if we direct all our energy to the production of that sole article, and it should become valueless, the whole community must participate in the ruin of the sugar-planter.

I may add, besides, in the words of Lord Harris, that "inattention to raising provisions is an evil of serious import, operating unfavourably against reduced cost of production, by rendering the labourers totally dependent upon high money-wages, to pay for imported articles of consumption—an alarming position to be in, with the prospect of curtailed employment." I also say this: we require a population, not only of field labourers, but of settlers; and to invite the latter to our shores, we must offer them inducements.

All new countries have been settled by the facilities afforded of purchasing virgin lands at a low rate: and, as a general rule, population has increased in a quicker ratio where, all other things equal, the price of land was lowest, and the conditions of purchase easiest. The settlement of our own island of Trinidad may be said to have fairly commenced, only after the Spanish government had adopted their most liberal system of granting lands on certain easy conditions. I am not prepared to recommend the adoption of a similar system; for public lands are public property, appertaining to the integral community, and which ought to be disposed of solely with a view to the advantage of all. Such lands, therefore, should in all cases be duly notified for sale, and then exposed and offered for public competition. To this it is objected,

that the whole of the emancipated class would then purchase lands and retire altogether from cane cultivation. But measures of a precautionary nature might be devised to neutralise such a result; and the inconveniences arising from the adoption of such a plan would be more than compensated by its concurrent advantages. Squatting would, most certainly, be at an end; and emigrants would arrive in sufficient numbers to make it hardly profitable for the great mass of our labouring population to become proprietors. "Moreover, to endeavour to reduce the negro to a state of almost forcible labour, would be to arouse his naturally suspicious mind, and render him unmanageable and difficult to govern; whereas, by giving scope to what industrial notions he may possess, and encouraging them, so that they may become habits, not only in himself, but in his children, his energies would be more rapidly developed, his general tone would be improved, and a thriving and, I believe, a numerous population would be more readily produced."—(Lord Harris to Earl Grey.)

To the present day, nothing has been done to encourage the industry of the emancipated class, or of emigrants generally. After importing the latter, we have, faithful to the compact, re-exported them at the expiration of their five years of residence in the colony, with whatever amount of specie they may have amassed. We have yet had no signs that the energies of the labouring population "have been developed;" that their "general tone has been improved." None of the improvements contemplated under the provisions of the Territorial Ordinance, have been effected; but, on the contrary, the largest proportion of the ward rates have been directed to purposes quite foreign to the measure, as originally passed.

"To force all the men of the lower classes, not otherwise employed, to become agricultural labourers is, I conceive, hardly desirable, and not very possible.

"It requires no very great experience amongst the lower orders of society, to discover that many will become useful members of society, if allowed to cultivate their own lands, who, if forced to labour for wages, only turn to the idle and dissolute life of smugglers or poachers in England, and that of squatters in Trinidad."—(Lord Harris to Earl Grey.)

The soundness of these remarks once admitted, it only remains to decide according to what plan, and on what terms, the public

lands should be issued on sale. The mode of dividing and selling such lands in the United States might be adopted here, with suitable localised modifications. It is described thus by Birkbeck:—"The tract of country which is to be disposed of is surveyed and laid out in sections of a square mile, containing 640 acres; and these are subdivided into quarters, and, in particular situations, into half-quarters. The counties are also laid out in townships of six miles square in some instances, and in others of eight. The townships are numbered in ranges, from north to south, and the ranges from west to east: and lastly, the sections in each township are marked numerically. All these lines are well defined in the woods, by marks on the trees. This done, at a period of which public notice is given, the lands in question are put up to auction, except the sixteenth section, which is near the centre in every township, which is reserved for the support of schools, and for the maintenance of the poor. There are, also, sundry reserves of entire townships, as funds for the support of seminaries, on a more extensive scale; and sometimes for other purposes of general interest. The lots which remain unsold are, from time to time, open to the public, at the price of two dollars per acre, one-fourth to be paid down, and the remaining three-fourths to be paid by instalments, in five years; at which time, if the payments are not completed, the lands revert to the State, and the prior advances are forfeited. When a purchaser has made his selection of one, or any number of vacant quarters, he repairs to the Land office, pays eighty dollars, or as many times that sum, as he purchases quarters, and receives a certificate which is the basis of the complete title which will be given him, when he pays all. The sections thus sold are marked immediately on the general plan, which is always open at the Land office, for public inspection, with the letters A. P., *i. e.*, advance paid."

The island being already divided into counties, it would only become necessary to lay out wards. The sections or lots might contain 640 acres, and be divided into halves, quarters, half-quarters, and smaller lots of six acres. The sale might be advertised for six months previously,—not in the "Royal Gazette," but in the different island newspapers, and notices posted in the locality to be disposed of. It should take place in the month of December, in order to afford to the purchaser an opportunity of clearing his land and building his cottage during

the dry season. The revenue derived from such sales, to be partly applicable to the making of roads in the locality, and partly to immigration purposes. The upset price not to be higher than the price of uncultivated land under the Territorial Ordinance. Taxes should be exigible only after the first year. In order to prevent the over accumulation of small settlers on the same spots, a few sections only in each ward should be subdivided, so as to suit that class of purchasers. The purchase-money to be paid down in cash. The quantity of public land to be brought into the market should be regulated by the number of immigrants, whose indentured time should have expired, and that of free immigrants who should have paid their own passage; so that no quantity of the labour actually employed in cane cultivation would be withdrawn.

The contemplated results of such a system would be, to form a body of industrious settlers, who would supply the colony—and particularly the labourers—with cheap and varied food, in the shape of corn, rice, plantains, cassava, and other ground provisions, &c.; and who would thus relieve us from the heavy drain of specie which we annually contribute to the American market. New growths would undoubtedly be introduced, and new articles of export raised; the imports would augment in proportion, and commerce be invigorated by a larger and readier circulation of capital, accruing from such an increasing amount of labour, as would produce a larger requital of it. Finally the agricultural interest would regain some of that tone and energy of pursuit, as well as an improved confidence, so material to its prosperity. Besides, we must adopt some such plan, in the event of an encouragement to immigration from the United States being contemplated. Immigrants from that quarter have proved excellent sawyers and jobbers, capital axemen, and experienced trenchers and canal diggers; but they do not seem inclined to locate themselves on estates as day labourers. I have no doubt, however, they would form a very useful class of industrious cottiers and farmers: they would probably submit to the necessary period of indenture, with a view to make up a small capital, and afterwards become independent settlers. With the accession in the labour market of their skill and industry, the system of central factories for the manufacture of sugar would have a

reasonable chance of success; and it is highly desirable it should have at least a fair trial.

But not only should inducements be offered, such as would invite immigrants to Trinidad, but such encouragement should also be given as would lead them permanently to settle in the island; and this can be done only by affording complete security to the person and property of the immigrant, and placing his rights under the protection of the law. With a view to that end, a liberal system of *denization*, or island naturalisation, should be at once established. A register could be opened at the Registrar-General's Office for that purpose, in which the name of the person so naturalised would be inscribed, such person paying a small fee, as also the expense of having his name inserted in the "Royal Gazette." All indented immigrants should be eligible to the grant of naturalisation at the expiration of their indentures, unless they should prefer returning home. All foreigners becoming landholders should *de facto* enjoy, in the colony, all the rights of British subjects; the privileges being accorded, however, only on their becoming naturalised. Will such a system be deemed too liberal? But, to what purposes should the public lands be reserved? And what inconvenience could possibly arise from a large influx of foreigners? It is evident that there are, in the British possessions, scattered over America, Asia, Australia, and Africa, lands enough to supply the exigencies, and satisfy the cravings of the most needy and avaricious. Offer, then, encouragement to foreigners to come and settle amongst us, and such a policy will assuredly prove as much for the benefit of British commerce, as for the welfare of the colony at large.

The same liberal views should be entertained concerning religion, and equal protection extended to all Christian denominations. It is granted, I believe, that the impartiality shown in the United States to all sects, has acted as an inducement to Europeans to emigrate thither—particularly catholics from Ireland and Germany, in which countries their religion was exposed to daily vexations. The British Government itself seems to have understood the necessity of such a policy, by relieving the catholic religion in the colonies from the many restrictions that still fetter it in Great Britain. In Canada, the catholic church is on a footing of equality with the church of England; in Australia and the Cape colony, it has also received assistance from government. The majority of

the population are catholics in several of the British West India islands, viz., in Dominica, Saint Lucia, Grenada, and Trinidad; but, in every one of them, the church of England has the lion's share. In Trinidad, where the catholic religion is now, and has, since the capitulation in the year 1797, always been supported from the general funds of the colony, the church of 45,000 catholics costs the colony £4,500, and that of 17,000 episcopalians, £5,500, besides extra allowances. For the last thirty-four years the catholic bishop had been in the receipt of £1,000 per annum as his stipend: our present governor, Captain Charles Elliot, has, by the advice of a protestant committee, and with the aid of an irresponsible council, reduced that sum to £500 sterling. This was but a first attempt at further aggression, as proved by the following fact. The present administrator of the diocese being an alien, the governor has withheld the entire stipend; and even refuses to recognise the bishop's authority *in matters of church hierarchy*. The withholding of the administrator's stipend, because he was an alien, was a questionable right, but the act, in itself, was certainly mean and derogatory; because the catholics of Trinidad, and not the administrator, have to bear the consequences: but, to refuse to recognise the authority of the latter in the appointment of parish ministers, is an undue interference, and an assumption of prerogative, of which every liberal and impartial man cannot but disapprove. In fact, Captain Elliot's partial and vexatious policy has been condemned here, not by the catholics only, but, it may be said, by the whole community—as proved by the petition to the Queen, signed by many of the most respectable protestant inhabitants of the colony, in support of a petition addressed to Her Majesty by Her Catholic subjects of Trinidad, praying for interference and redress. The measures adopted by the governor are viewed with extreme jealousy and suspicion by the catholics, and may prove an unhappy source of ill-feeling.

Should the correctness of my views on church establishments be admitted, I say they are particularly applicable to this island of Trinidad: for, not only do two-thirds of the aggregate population profess the catholic religion, but those catholics are the descendants of the first settlers who surrendered by capitulation, and as such, have not settled here as a matter of choice.

To conclude my observations on our administration, I have to add but one remark. At one time the principal officials, in the

different offices of government, received their appointments from *Home*, and could not be dismissed, except on an order from the Colonial office. Evidently, this was too much centralisation, but, in order to avoid one excess, they have fallen into a still greater. All the inferior officers are, at present, mere dependents of their chiefs, appointed by them, or through their interest, and may be dismissed at will. It needs but to mention the many inconveniences resulting from such a system, to render evident its injustice and dangers. As the heads of offices possess the privilege of choosing their own subordinates, it is natural they should be guided, if not invariably, yet on many occasions, by private considerations. They will generally select their clerks, either through the tie of relationship, or from being highly recommended by some friend; but seldom or never from the just claims of previous services, or actual qualifications. Under this system, what is the position of young men employed in the public offices? What are their hopes of advancement? and what becomes of the incentives to emulation? Subservient and accommodating they must be, to gain the goodwill of their employers, and to secure a recommendation to their future superiors. Now, can a man placed in such a situation be independent? And, unless he be case-hardened in honesty, is there any guarantee that he will disclose any sinister transactions in the office; or even that he will not participate in any delinquency of his superior? The present plan is evidently pregnant with injustice to the *employé*, and danger to the public service. The subordinates ought to be appointed by the governor personally, and be responsible to him solely, as the only impartial arbiter in cases of merit or demerit. The conclusion to be drawn from the facts enumerated in the foregoing pages is, that there is something rotten at the core, in the system of administration, as regards this colony.

The geographical position of Trinidad and its natural resources are, as I have elsewhere observed, surpassed only by those of Cuba; it is also comparatively a new country laid open to successful enterprise: yet, it is every year sinking more and more deeply into the abyss of misery, all classes suffering alike. I have endeavoured to trace the causes of that misery, and have found that, whilst some are beyond our control, others we can grasp and cope with. These causes are the following:—the ruinous price of our staples, in consequence of

excessive production and unequal competition; the usurious rate of interest at which the planter is compelled to borrow, and the consequent necessity of shipping his produce to the single market of Great Britain; the influence of former social institutions, and the consequent unreclaimed dispositions of the labouring classes; a constant drain of specie, in payment of imported articles of consumption, and in defraying the expenses of immigration conducted under restrictive regulations, and with the absurd condition of returning the immigrant to his country, after a certain period of industrial residence; the low state of agriculture in the colony; a defective administration; and lastly, the present form and condition of our government, which does not admit of the participation of the people in the management of their own affairs,—a system under which everything is mismanaged, or at least carried on with partial views. Now, I say—should this state of affairs continue much longer, the fate of Trinidad is sealed, the colony is irretrievably ruined, and the population must relapse into barbarism, from the mere impossibility of maintaining the social institutions of civilisation. Should, on the other hand, the conditions under which Asiatic immigration is conducted, be altered, and a vigorous and, at the same time, impartial and paternal system of administration be organised and carried into operation, then only may we hope to bear up under the pressure of adverse realities and unavoidable contingencies, until the advent of better days; and come they must, if we gird ourselves for a hopeful strife with present adversity. But, I reiterate, we cannot place any dependence on a change of the present commercial policy of Great Britain, which itself has been an active agent in our ruin: in the management of colonial affairs in Downing-street we have no voice, no action; and, consequently, nothing to hope from that quarter. We must therefore place our reliance, under Providence, on circumstances and our own exertions. As regards circumstances, it is clear that the consumption of sugar is not at present in fair relation with the quantity produced throughout the world; and, as a consequence, the price is irremunerative. It is, therefore, the height of folly to extend the cultivation of the sugar-cane at present; the planter ought to direct his energies, rather to the improvement of the cane cultivation at its actual extent, and of sugar manufacture, in process and quality, whilst he patiently waits for a larger demand. Now, is an improvement in the quality of sugar a desirable object?

and will the demand for the article increase? Surely, the first question will be regarded as a burlesque; for, it cannot be known that in Trinidad it is considered more profitable to manufacture bad sugar than good. Extraordinary, however, as this may appear, the opinion has some foundation. For instance, I could mention the case of a planter who became a loser by improving the quality of his sugar, even though the article fetched a higher price in the home market. How can this be? may ask some inquisitive economist. Simply on account of the extra duty exacted on the improved quality, and which absorbed more than the profits. This is strange enough; but what will perhaps appear still more so, is the reason given by the home government for exacting a higher duty on the better qualities.—*It is with a view to protecting the interests of the colonists.* Who could have ever imagined that, now-a-days, the British Government, in their solicitude for the welfare of the West India planter, would have discovered such an *unobjectionable* mode of affording him protection? That the extra duty is intended as a protection to some class, or body, may be easily proved. Under a uniform scale of duty, foreign sugar of a better quality, would have the preference for grocery, but not for refinery purposes; because its higher price would be an objection to its being used for the latter purposes. On the other hand, none of our inferior sugars are at present bought up by grocers, but by refiners only. The so-called protection, therefore, is no protection at all, since there *is* not, there *cannot* be, competition between the two articles. Thus, the only parties who are really protected, are the refiners at home, who realise larger profits by the refining of inferior samples, obtained by them at a low price, than on finer sugars at a higher rate. These are, therefore, the parties who have prevailed upon the government to discourage the production of superior qualities; and their influence, as a body, is more to be dreaded than courted. How is it that Cuba supplies nearly all the markets of the world —the United States, the British colonies of the north, Russia, Prussia, Italy, &c.—whilst our sugars, or at least the inferior kinds, are exported to Great Britain only? Because, in America, Russia, &c.—even in Scotland and Ireland—very little refined sugar is consumed by the people, who are satisfied with the best muscovado, or the clayed sugar. Not a pound of our sugar is exported to the United States or the North American colonies.

Last year, a lot of our best muscovado sugar was consigned to Halifax, but did not find purchasers: nor is it to be expected that even under the advantageous terms offered by Canada, Trinidad sugars will find a market on the banks of the St. Lawrence. Let the good folk of Trinidad yield to the *encouragement* offered, and persist in their present policy; then the only market which will remain open to them will be that of Britain; and the only purchasers they will find for their *protected* article, will be the British refiners. Now, *ought* we to expect better chances for our staple articles? Undoubtedly, if the consumption of sugar and cacao increases in the world. The average quantity of sugar consumed in Europe and North America may be stated at 5lbs. per head; in England it is about 40lbs., and nearly 32lbs. in the United States. Certainly, it cannot be expected that before many years have elapsed, the average consumption will have increased to that of England or the United States, but we may reasonably expect that it will increase to 9lbs. per head—the actual consumption in France; in which case the production might be brought to 4,476,300,000, or 1,492,100,000 more than the present standard. Cuba and Brazil will evidently contribute their quota to that increase; but the effective suppression of the Slave Trade must, of necessity, check the production of sugar in these two countries; in addition to which, slavery itself is suspended above them like the sword of Damocles, and if the hair by which it hangs is not carefully severed by some philanthropic and prudent hand, the dangerous weapon will be violently plucked down by the convulsive grasp of revolt.

It will be a work of time ere the cultivation of the sugar-cane increases on the neighbouring continent; inasmuch as it will require time for the aggregation of a population sufficiently numerous to furnish an adequate labour-power for its extensive cultivation. Our principal competitors will therefore be the isles of the East. But not only are their lands in general less fertile than ours, but we are closer to Europe, and closer still to the growing markets of North America.

As a consequence of the present low price of sugar, consumption *must* increase, and a taste be created for that almost necessary of life. 1stly—The peace which shall follow the present war will, probably, have for result, an extension of commercial intercourse, and the opening of the markets of the continent to colonial pro-

duce. The facilities of communication by railways, may now bring the article within reach of the most remote parts of Europe. Increase of consumption without a proportionate increase of production, must diminish the stock in the different markets of the world; and then will result a reactive rise in price, necessarily followed by a remunerative production in cultivation. 2ndly—The scarcity of bread-stuff in Europe, of late years, has caused an importation of rice and corn; and these articles will probably be cultivated in tropical Asia and America—their native lands—as objects of export. The disease of the vine, and the increasing demands of commerce, will also tend to increase the distillation of rum. 3rdly—The dangers attending the indiscriminate encouragement of an unlimited competition in the production of essential articles of commerce, begin, I believe, to be clearly demonstrated in the actual state of the cotton market. The people of the United States, being in a position to produce cotton cheaper than any other nation, have, *de facto*, obtained the monopoly of the cotton markets of the world; and it is now felt that they begin to exercise an undue influence on the welfare of Europe, and of Great Britain in particular. What becomes of the great manufacturing interests of England and Scotland, without the cotton of the south? England will do nothing to save her sinking colonies, but she will do almost *any* thing to court the good will of the Americans. I therefore consider, as a natural consequence of the low price of sugar, and the anomalous state of the cotton market, that the production of cotton will be encouraged in Brazil and in Asia, to a greater extent than that of sugar. Trinidad cacao had acquired at one time a deserved reputation in the markets of Spain and France; but, as already stated, frauds on the part of the merchants, and the encouragement given to the production of an inferior article for the British markets, have reduced our cacao to its present depreciation. The lesson ought not to be lost to the sugar planter. Now, to redeem the lost reputation of the Trinidad cacao, the best kinds ought to be selected for planting, and the article be cured for the French and Spanish markets, where it will both fetch a better price, and also will never be subject to the heavy fluctuations which occur almost monthly, in the home market.

I have, I believe, fully exposed, and satisfactorily proved, the

insufficiency and glaring defects of our laws, as applicable to the civilisation and requirements of our community; as also the hollowness and tyranny of our local policy: I have also ventured on suggesting some changes. The soundness of my views may be controverted, but there does not exist, I think, a doubt as regards the possibility, as well as the urgent necessity, of improving our laws, and rendering our administration more effective.

Now, is our local government adequate to the task? I say that, from past experience, it is not, but, on the contrary, will oppose even the most insignificant changes as inimical to the interests of the few individuals who misgovern this colony. I have already mentioned the composition of our government; it consists of an executive, and of a legislative council. The legislative consists of six official and six non-official members. The six non-officials are nominees of the crown, chosen from amongst planters, merchants, and attorneys of absentees—generally selected, not on account of their qualifications for the office, but mainly in consequence of their connections, and their assumed position in society. Of this form of government I will only say that it is *sui generis*—having none of the merits, and all the defects of a despotic rule. The largest share of influence and power is divided between the Attorney-General and the Colonial Secretary, who really and actually govern under cover of the governor's prerogative. As regards measures passed in the colony, the non-official section act as a shield, whilst the responsibility of all measures which the governor may have advised and recommended to the adoption of the Minister for the Colonies, is by him shifted to his superior—a responsibility, however, generally assumed with much good-will in Downing-street. Things are so arranged, that the governor is almost certain of carrying any measure he proposes, even without giving his casting vote. Not only is public opinion never consulted, but our present Attorney-General seems to make it a point of deciding contrary to that opinion, whenever expressed. The people are taxed without their consent having been obtained through their representatives; and the money voted is spent independent of their voice or control. This is not all: the very nature of our local government renders the welfare of the community a matter of perfect indifference to our rulers. The grand, the important affair, is the civil list. All

is safe, when the money for meeting the demands of the salaried officials has been secured: on occasion it is even remitted to England as a security.

Again, public situations are here considered as the patrimony of a few influential persons, who dispose of them as provisions made for their relations, or rewards to their *protegés;* and, in order to cultivate a good understanding, and insure a safer monopoly, there exists between these lordlings of patronage a sort of reciprocity treaty, a tacit family compact. Appointments are made—even to the most responsible situations—irrespective of qualifications, and where qualifications do exist, irrespective of claims. Functions are often accumulated in the shape of pluralities, so that the same individual, simply because he already occupies one position, is considered as entitled to fill another, and that sometimes of a totally opposite bearing and character. As a consequence, *back-door* and under-hand influence may be traced in nearly all the appointments made. The governor of a crown colony, being vested with almost unlimited power, can do much good, if he is disinterested, if he is desirous of consulting the wants of the colony he is called to govern, and capable of forming an opinion on the subject; if, on the contrary, he proves self-conceited, stubborn, and at the same time, vacillating and enamoured of change, he will become the oppressor, in lieu of being the protector of the community over which his authority extends. What his predecessor has done, he will undo as far as possible; the very agents the former has appointed, he will distrust. Captain Elliot has not found one of the 40 wardens selected by Lord Harris, capable of filling the well paid situations created by himself, under the Amended Territorial Ordinance. Again, what opinion can a governor form of the requirements of a colony, after six or even twelve months therein? He must borrow his opinion from a few; and in case those few are possessed of a little aristocratic *morgue*, they will always give their decision against the *profanum vulgus*. They will oppose every change that would tend to limit their power or influence. This is natural; but what I consider anomalous is, that British ministers invariably adopt the conclusions of a few interested individuals, transmitted through the governor, as their organ, against the prayers of a whole community; and those conclusions they adopt, probably with a view to avoid the annoy-

ance of examining into matters which would require a little time and attention. And so certain is the governor of approval, in almost whatever he may recommend or object to, that matters may be said to be carried here with a very high hand. Opinions may be contested, but facts are stubborn things; well then, there are two facts which must tell against our present form of government. There does not exist one single record of a petition, on matters of general interest, having ever been granted by the Legislative Council,—the officials, as one man, generally voting against. For the last five or six years, the governor, on a seat being vacant at the board, has been compelled to go the round of begging the most respectable inhabitants to accept the honour of becoming legislators, ere some *complaisant* could be found willing to yield to entreaties; whilst others who had accepted after repeated solicitations, have very soon resigned in disgust. Is it to be thought or said that the public were always wrong in their demands; and that all those who refused to accept, or declined to retain, a seat at the board, were induced to do so through sheer modesty, incapacity, or from disinterested motives? And whenever petitions have been sent home, they have invariably met with repulse, on the grounds suggested by the local government—at times, even in the very terms urged by our irresponsible rulers.

Now, what are the apparent and potent reasons for refusing to the inhabitants of Trinidad a voice in the government of their own affairs?—They are not yet fitted for representative government;—there is not to be found in the colony, a sufficient number of intelligent and independent persons able, or willing, to devote due time and talent to its affairs;—the colony is not thoroughly English in language and habits.

It is said that we are not yet fitted for representative government; but by whom?—By those who wield the power, and by those who, generally speaking, have every reason to be satisfied with the partiality of the government in distributing the loaves and fishes of patronage. There are various forms of representative government, and which generally differ in the greater or less extent of powers vested in the representation. Opinions may differ, here and in England, as to the form best suited to our circumstances; but this I unhesitatingly affirm:—there is here a confessed unanimity of opinion as to the present form of govern-

ment; it is regarded as the worst which could possibly have been invented. "We can see vividly and distinctly the evils of our present rule; the oft-time inconsistency—the lack of responsibility—the disregard of the interests of the colony—the subserviency to private interests, and the unaccountable privacy and mystifications of the acts and turns of the governmental machine; and we believe that many of them might be done away with, if the wishes of the governed could be brought to bear on them." This succinct portraiture of our government was drawn, *not* by an enemy or a *reformer*, but by a friend and one who supports the pesent rule: it is to be found in "the Port-of-Spain Gazette," of May, 1855. Evidently, a governor who would have to bear the unmitigated *onus* of his own acts, would probably show rather more discretion than he now does, under a divided responsibility: at present he may exhibit in all his undertakings a perfect recklessness of purpose, totally at variance with every principle of sane government.

The assumption that a sufficient number of independent and qualified persons could not be found, is rather presumptuous on the part of our rulers; for, a purely elected body would certainly be, at least, as independent and qualified as the anomalous and nameless machinery at present in operation.

The majority of the population is stated to be foreign in language and habits; this I might disavow—though, even granting the postulate, I still maintain that it is by no means a sufficient ground of objection; for, it has not yet been satisfactorily proved that a peculiar language and certain habits are necessary qualifications for representative government. Lower Canada and the Cape Colony may be cited as examples to the contrary. Never have these two possessions been more tranquil and prosperous, than since a representative government has been permitted them. A man may not speak the English language fluently, nor possess British habits, and yet, may be able to form a very good judgment of what is best adapted to the requirements of the society of which he is a unit, and choose his representative accordingly.

The preceding are the specious reasons assigned by the interested upholders of the rottenness of precedent; but the real though secret objections to any civil reformation, are the following:—the very natural desire of those who hold almost despotic power, to retain it in all its integrity; the origin and

religion of the great majority of the population. The participative influence of British subjects of foreign descent, professing the Catholic faith, is evidently distasteful to those who boast of Anglo-Saxon origin.

On these general observations may be founded our answer to the objections of an imperceptible minority. But there is another point which I am desirous of bringing under the consideration of the British people. As long as protection was granted to these colonies, as long as they were treated as integral parts of the empire, and as such enjoyed certain privileges, so long were there plausible reasons for exercising a controlling power over their acts and local administration, by the Colonial office. But are not the terms of the tacit compact which then existed, completely changed? As regards commercial advantages, we are not on any better footing than Cuba and Brazil; for we are treated alike with them in the British markets; and even the advantages of imperial protection have become very problematic.

Authority is granted to our Legislative Council *to tax British manufactures* for revenue purposes, and we are denied the privilege of taxing ourselves for the same ends. To the many difficulties against which we are left to struggle, is added that of being administered from Downing-street, by the advice and through the intervention of irresponsible agents. This is cruel injustice; this is insulting mockery. Determine the form and scope of the government to which our obedience is required—but in the name of justice, let us have the management of our own internal affairs. The conditions of the connection between the mother country and the colonies, have been completely changed by the adoption of the free-trade policy; to use the words of Dr. Davy, "it should not be broken, provided—and how necessary is the proviso—that the two are beneficial to each other; that one is not enacting the part of a harsh step-mother, but of a kind and considerate parent; nor the other the part of burdensome spendthrifts, but of industrious, dutiful, and loving children; and it may be added, out of leading strings, self-controlling, and self-supporting, and not in perpetual tutelage."

I will now sum up by asserting that we are in a transition state: but the evils consequent upon such a condition are, generally, liable to correction,—at least within certain limits.

Events will arise which shall, in all probability, place in its proper light the importance of the Western Archipelago, and of Trinidad in particular. It is therefore reasonable that we should adopt measures, and make preparations for any favourable crisis which may ensue. We evidently have no relief to expect, and therefore none to seek from England; we must be prepared, on the contrary, to be treated as heretofore, in the light of forlorn children. But I am confident that an enlightened and energetic administration may, by the adoption of measures, at once vigorous and reformatory, cauterise and heal some of the loathsome cankers which corrupt and consume the substance of the colony, viz., vagrancy, squatting, and their consequences, together with those arising from ignorance.

Those measures must be based upon, and supported by a liberal and comprehensive system of public education; judicious arrangements for the sale of Crown-lands; and the encouragement of free, as well as paid immigration, coupled with a law of denization. But to obtain these objects, it is necessary that the people should have a voice at the council-board of the island. Trinidad has been regarded for years as the colony of experiment: *faciamus experimentum in anima viti.* We might have hoped that the Colonial office had no more experiments to try, but it is evident that the privilege still exists, though now yielded into the hands of the governors who are periodically sent to rule over the island.

I have openly, and I think impartially, exposed the defects of our population; but I cannot conclude without stating that as a whole, there is not, in the West Indies, a population more peaceful and more orderly than that of the colony of Trinidad. This, strangers who have visited the capital town of Port-of-Spain, and the island generally, have had an opportunity of observing: and I have heard them express their gratification, and with it their surprise, at the quiet and orderly behaviour of the population on all public occasions,—either in crowds, as at races, or at any seasons of general festivity. No swearing, no intemperance, no tumults. I may add as regards the natives of Trinidad—whom the government pretend to *distrust*—that, out of 1,168 prisoners committed to the royal gaol, in the year 1854, 166 only were born in the island, making the proportion of native to all other offenders, as 1 to 8! "It is also very gratifying to see the emulation which

has been called forth among the young, by holding examinations, and by the distribution of a few prizes; and I feel certain that it only requires the means to diffuse instruction more extensively, to cause a rapid and general improvement in the mental, and I hope also, in the moral state of the population; to what pitch of advancement they are capable of attaining, still remains to be proved."—(Lord Harris.)

This opinion of a nobleman who governed this colony for six years, and to which I give full and unqualified assent, contains the condemnation of a government which manifests the greatest indifference towards, not to say contempt for, the improvement of the mental and moral being of the much-abused people of Trinidad.

APPENDIX.

NATURAL HISTORY OF TRINIDAD.

ZOOLOGY.

MAMMALIA.

TRINIDAD fully realises what has been said of tropical regions in general; organic life is there at its *summum*, and some specimen of existence is everywhere to be found. Not only is the surface of the ground covered with some plant or other—here shrubs, there gigantic trees; here grasses, there lianes,—but in every pool, in the running stream, some alga is to be picked: the trunks and branches of trees not only support lichens and mosses, but also bromelias, epidendrons, ferns, and caladiums. Under the bark of living and decaying trees, in the calyx of flowers, on the stems and leaves, are to be observed hosts of insects; they are met with again at the surface of the soil, and on turning up the vegetable debris which contribute to form its rich superstratum of mould, hundreds of the Entomological tribes are discovered. In the copses and the recesses of forests, quadrupeds,—above in the dense foliage, birds,—representatives of nearly all the genera of their classes, are to be found: reptiles are to be seen coiled up, or motionless on the watch, or stealthily gliding away. Not only do our rivers, lagoons, ponds, and pools swarm with fish, alligators, snakes, batrachians, and even chelonians, but they also afford a receptacle for myriads of the larvæ of mosquitoes and libellulæ, as well as of other insects, and tadpoles. In the atmosphere, and buzzing around, are heard coleoptera, hemiptera, hymenoptera, and diptera, whilst beautiful lepidoptera are everywhere in quest of flowers wherein to plunge their long spring-like suckers, and arachnidans in constant ambush within their subtle webworks.

Evidently it would require many years of the lives of several individuals, to give an accurate and complete description of the numerous and various creations which thus animate our island;

nor can I have the presumption or pretension of offering within the following narrow compass, other than an imperfect summary of our Fauna and Flora. I only wish to show how rich is this small spot in objects of Natural History, and how much allied, in these respects, to the neighbouring continent.

VERTEBRATA.

Class I.

Within the limits of Trinidad are to be found the following mammifers, or Mammalia:—

Order II.—Quadrumana.

Howling-monkey, Singe-rouge	*Mycetes.* 1 species. *Mycetes Barbatus.*
Sapajou or Grey-monkey, Singe-blanc	*Cebus.* 1 species.

Order III.—Carnaria.

Bats	*Cheiroptera.* 4 genera. *Molossi.* *Noctilions.* *Noctilio leporinus.* *Phyllostoma.* *Mormops.*
Carnivora	*Plantigrada.*
Racoon, or Mangrove-dog	*Procyon.* *Procyon cancrivorus.*
Glutton	*Gulo.*
Gato-Melao, or Taïra	*Mustela Barbara.*
Chien-bois, or wood dog	*Viverra vittata.* (?)
	Digitigrada.
Otter, or Loutre	*Lutra.* *Lutra insularis.*
Cat	*Felis.*
Tiger-cat, or Chat-tigre	*Felis Pardalis.*

Order IV.—Marsupialia.

Opossums or Manicous	*Didelphis.* 3 species. *Didelphis Opossum.* ,, *Cayopollin.*

Order V.—Rodentia.

Squirrel	*Sciurus.* 1 species.
Rat	*Mus.* *Echymys.* 2 species. *Echymys chrysuros.* ,, *Rufus.* (?)

Order V.—*(continued.)*

Rats, properly so-called	*Mus.* Several species.
Porcupine	*Synetheres.*
Porcupine, or Coendou	*Synetheres prehensiles.*
Agouti	*Chloromys.* *Chloromys Acuti.*
Lape, or lapo.	*Coelogenys.* *Cavia Paca.*

Order VI.—Edentata.

Armadillo or Tatou	*Dasypus.*
Cachicame	*Cachicamus novemcinctus.* ,, *Septemcinctus.*
Ant-eater	*Myrmecophaga.*
Great Ant-eater, or Sloth	*Myrmecophaga Tridactyla.*
Small Ant-eater, or Sloth	,, *Didactyla.*

Order VII.—Pachydermata.

Cuenco, or Pecari	*Dicotyles.*
Collared Cuenco	*Dicotyles Torquatus.*
Red Cuenco	,, *Labiatus.*

Order VIII.—Ruminantia.

Deer or Biche	*Cervus.* *Cervus simplicicornis*, or *Guazoupita.*

Order IX.—Cetacea Herbivorous.

Manati, or Lamantin	*Trichecus Manatus.*

Ordinaria.

Whale, or Baleine	*Balaenoptera.* *Balaena Boops.*

These are the mammifers which are known to exist in Trinidad. Of several of them there are varieties: for instance, two agoutis, distinguishable by their colour, one being much darker than the other, and, perhaps, smaller in size; two lapos, likewise differing in colour, one being fawn, and the other brown coloured; the former also with whitish feet, and of a larger size. There are, again, two varieties or even species of the guazoupita, one larger, of a darker colour, with antlers covered with a soft skin, and having habits somewhat dissimilar from those of the more common kind; it is apparently more solitary, and when chased by dogs, starts off at once in a straightforward direction; albinos are not rare among the guazoupitas.

The habits, aliment, and resorts of these mammifers are varied. The opossum, agouti, and deer seem to prefer the neighbourhood of plantations where they find an abundance of food—viz., the opossum, fruits, and fowls; the agouti, fruits, and roots; and the deer, maize, peas, manioc, &c. In the same localities are also met squirrels, lapos, and tatous; the squirrel chiefly infesting cacao plantations, in which it sometimes commits great ravages. The pecari is always found in the high forests, where it feeds upon roots, fruits, leaves, and even upon snakes and reptiles. The tiger-cat, taira, great and small ant eaters, and the tatou, also haunt the high woods—the latter preferring generally, low and soft ground, where it can grub in search of worms which form its principal food. The racoon does not venture out of the mangrove swamps, as it there finds an inexhaustible supply of crabs. The otter is found in ravines, where it can easily seize the fish upon which it preys. Both the howling and weeping monkeys shun the presence of man; the latter may be said to abound principally in the south-eastern part of the island, whilst the former is often heard in Cimaronero, and the northern mountains at Carenage and Diego-Martin. The echymys is met in the vicinity of cacao plantations and provision grounds. The whale frequents the gulf from January to May, and as far as I am aware, the manati has been seen only in the Guataro, which it ascends for a certain distance in search of food.

The aguti, pecari, racoon, and monkeys, are accustomed to seek their sustenance during the day, and particularly in the morning and towards evening. The deer, lapo, cachicame, tiger-cat, and great ant-eater, roam about during the night,

leaving their recesses or the woods, about one or two hours after sunset. Similarly timed is the opossum, and particularly on fine moonlights, which afford the best opportunities for taking them, as several may be surprised on some fruit-tree, and their retreat being cut off, they are easily shot. From six in the evening, to eight and ten at night, are also very favourable hours for *watching* the deer in their feeding grounds.

Nearly all these animals produce but one at a birth, viz.; monkeys, the deer, lapo, and pecari: the aguti in general brings forth two; the cachicame, from four to five, and the opossum, from five to seven. The monkeys and opossum carry their offspring about; and should the mother be killed, the young continue to cling to the parent corpse, and are thus easily captured. Like other ruminantia, the deer conceals its fawn in some thicket, but runs to its succour when called upon by its distressed bleating; and though ordinarily proverbial for timidity, it has been known, in some cases, to give battle to the aggressor. It is particularly attached to its male offspring.

The aguti and lapo are easily tamed; they however, always retain something of their natural wild dispositions, particularly the latter, which remains concealed in some corner of the house during the day, and only ventures out after sunset; they are never very pleasant guests, as they gnaw everything which comes within their reach, such as furniture, wainscoting, &c. The deer, pecari, and mangrove dog, particularly the two latter, are easily domesticated, and become as tractable as dogs. Although perfectly docile, however, and even much attached to its master and the household, the pecari rushes fiercely on strangers, and is, in fact, an admirable watch. The racoon becomes so familiar as to be troublesome from its caresses. The deer is likewise an annoying favourite, as, besides destroying garden-plants, it nibbles books, cloth, &c. I know an instance of a female deer, which grew so tame, that it was allowed to roam at large about the neighbouring plantations, and thus became large in young; it was unfortunately shot one night, and, being dangerously wounded, ran to its mistress as for aid and protection; but it died a few days after, bitterly regretted by the young lady who had taken great pains in rearing it. The squirrel can be easily tamed also, but it will carry off anything it can lay hold of

to some hiding-place, and on one occasion, the first part of the "Gazza ladra" was realised in a respectable house in the colony.

A servant had been severely reprimanded on account of some missing plate, and her reputation even called in question; the articles were, however, found a few months after, in some holes, where a squirrel had concealed them.

The deer, agouti, pecari, lapo, and cachicame, the two latter particularly, are very fine game. The flesh of the deer is rather dry, except, however, when the animal is young and fat, particularly the doe. The agouti may be said to be flavourless, and never fat. The pecari when young and fat, is an excellent dish, as is also the cachicame: the manati is excellent eating, either salted or fresh.

As it is difficult to preserve meat for any length of time, in our climate, those who make hunting an occupation, adopt the following plan. The bones of the animal are disjointed, the flesh deeply incised, and sprinkled with salt; the flesh is next laid on a *boucan*—a sort of stage made of green sticks, resting on four posts about three feet above the ground—a slow fire is then kindled beneath, and the carcase thoroughly smoked; the flesh thus prepared is dry, tough, and unsavoury; though that of the lapo and cuenco are, in this state, sold at high rates. The taste is not very unlike that of hung beef.

Tatous and lapos are taken in traps, the latter more frequently, as they generally follow the same beaten track to get at their food. This track once discovered, a falling trap, composed of heavy logs, is carefully disposed along the passage, and rarely fails to crush or retain the animal. Another very dangerous method is the following; a gun is *set*—as it is said—by being fixed on a couple of rests, and a twine attached to the trigger, also connected with a bait at the muzzle, commonly an ear of maize; when the lapo, or any other animal, attempts to gnaw or disengage the corn, it necessarily pulls on the trigger, and generally receives the contents in the head. Not a year passes during which some person is not dangerously wounded, and sometimes killed, from the setting of such unlawful snares. The most common method, however, is the chase, in which the best dogs for tatous and lapos, are the pointer, the terrier, and our common breed, some of which are capital hunters, especially those crossed with the *Guarauno* races. I have no doubt, however, that the basset

would prove superior. Whenever the lapo has a long run to its retreat, or, more generally to the river, whither it invariably resorts for safety, it may be caught by fleet dogs; otherwise it is killed in its own fastness, which is commonly a hollow tree, or a cave in the midst of a labyrinth of roots, or under the bank of some stream—the two latter with several outlets. The tatou is always killed in its burrow, and it is necessary to dig or smoke it out, when there is too great a difficulty in reaching it. The agouti is either shot, when pursued by dogs, or on the watch; sometimes also in its retreat—almost invariably the hollows of the decayed interior of some fallen timber, or beneath the roots of trees.

The chase of the pecari resembles, on a small scale, that of the wild boar in Europe. When in numbers, the pecaris not only show fight to the dogs, but sometimes give them chase, should the latter be few and of small size; several of these animals may be shot, when met in a *band;* but they are generally killed with the spear or cutlass when at bay, seldom with the fowling-piece. The most pleasant sport, however, is deer-hunting, for which the best dogs are unquestionably hounds. The deer behaves, when chased, exactly like the roebuck: after one hour or more of chase, it returns by a circuit, to the very spot whence it was started, and then makes a dart in a straight line. If within the proximity of a river, it crosses the stream several times; or, if shallow, walks down the bed, probably with a view, by checking the scent, to set the hounds at fault, or to divert the pursuer from the track; if on the sea-board, it generally seeks refuge in the water, and sometimes swims out for more than a mile; it is nevertheless easily caught, if a canoe be at hand, as in that element it is slow in its movements; or it may be turned, and again compelled to seek the land. The deer is also very commonly shot on the watch, particularly during the full moon; and this method is preferred by the peons, as they find the chase of this animal very trying to their dogs. The manati is, in a like manner, shot whilst at graze: but if only wounded, it rushes to the water, and thus escapes; it is sometimes watched at the mouth of the Guataro and speared with the harpoon.

BIRDS.

AN ESSAY ON THE ORNITHOLOGY OF TRINIDAD,

BY ANTOINE LEOTAND, M.D.P.

THE study of the birds of Trinidad is far from being devoid of interest. The number of genera to be found in the island is sufficiently large to render the correct determination of species a service to ornithological science. Respecting nearly 300 species which have fallen under my observation, there are errors enough to correct, and facts enough to record, such as to constitute these researches a matter of no idle curiosity.

We lie so contiguous to the southern continent, that our ornithology must necessarily differ from that of the other West India Islands. This is a point of geographical distribution which has its importance, both as regards the science in general, as in questions of pure locality. So luxuriant and varied is our vegetation, our forests so extensive, our insects so numerous, and the disposition of the country itself so far from being uniform, that the vastness of our ornithological treasures cannot form a matter of surprise; and should I but enumerate the species, that alone would be to enregister facts which, at a remote period, may acquire an immense local interest. Our vegetation will change, our soil become impoverished, our forests will diminish in extent, as they yield to the axe; our marshes will disappear, and our insects cease to swarm in such numbers as at present, and, as a consequence, the ornithology of the island will then present in its aspect, a change which is even already perceptible.

But this is a range which I am far from proposing to bring within the limits I have prescribed to myself. I must, therefore, confine my remarks to a few general considerations and some restricted details.

Taking Cuvier as a guide, the following are the genera and sub-genera I have observed here:

- Raptorial or Birds of prey.
  - Diurnal.
    - Noble.
      - FALCONS.
      - Falcons (properly so-called). Two species. *Falco Bidentatus.*
      - Goshawk-Eagle (*Morphnus*). One species. *Spizaetus Ornatus.*
      - Cymindis . . . . . Two species.
      - Goshawks (*Astur*). . . Five species. *Astur Plumbea.* *Falco Melanops.*
      - Kite (*Milvus*). . . . . One species. *Falco Furcatus.* (a)
    - Ignoble.
      - VULTURES . . . . . Two species. *Vultur Papa.* (b) *Vultur Urubu.* (c)
  - Nocturnal.
    - OWLS (*Strix*) . . . . One species. (d)
    - Sparrow-owls (*Scops*). . Three species. *Strix Nudipes.* (e)
- Passores. Dentirostres.
  - SHRIKES (*Lanius*).
  - Shrike (properly so-called) . . Many species. *Thamnophilus Major.* *Thamnophilus Doliatus.* (f)
  - Becarde (*Psaris*). . . . . One species. *Lanius Cajanus.*
  - FLY-CATCHERS (*Muscicapa*).
  - Tyrants (*Tyrannus*). . . . . Several species. *Lanius Pitanga.* (g) *Tyrannus Ferox.* (h) *Tyrannus Solitarius.* (i) *Tyrannus Savanna.* (j)
  - Fly-catchers (*Muscicapa*). . . Several species. *Muscicapa Ruticilla.* (k)
  - Platyrhyncos . . . . . One species. *Platyrhyncos Cancromus.*
  - Muscicapida . . . . . Several species.
  - Tersine (*Tersina*). . . . . One species. *Tersina Cærulea.* (l)
  - Procnias . . . . . One species.

(a) Excepting a kite and a sparrow-hawk, known here respectively as the sciassors-tail and the Gri-gri, all our falcons bear the name of Gavilans, viz., the speckled, the white, the black Gavilan, &c.
(b) The King of the Corbeaux.
(c) Common Corbeau; one with a red head is called the Governor of the Corbeaux.
(d) Cent-coups de couteau.
(e) A large owl inhabiting churches and other large solitary buildings.
(f) Wood-Pintade, or Carate-bird.
(g) Qu'est-ce-qui-dit.
(h) Pipiri.
(i) Id.
(j) Longue-queue, or long-tail.
(k) Officer.
(l) Cotinga.

Passeres.

Dentirostres.

	Ampelis Carunculata. (a)
Averano (*Casmarhynchos*) . .	One species.
	Ampelis Variegata. (b)
Tanagers (*Tanagra*).	
Tanagers euphonious.	
	Tanagra Violacea. (c)
Tanagers (properly so-called).	
	Tanagra Mexicana. (d)
Cardinal Tanagers.	
	Tanagra Gyrola. (e)
Rhamphoceline Tanagers . . .	Many species.
	Tanagra Nigerrima. (f)
	Tanagra Rubra. (g)
	Tanagra Episcopus. (h)
	Tanagra Jacapa. (i)
Blackbirds or Merles (*Turdus*).	
Blackbirds (properly)	Four species.
	Turdus Flavipes. (j)
Ant-catchers (*Myothera*) . . .	Two species.
Warblers.	
Fauvettes (*Curruca*)	Several species.
	Sylvia Æstiva. (k)
	Sylvia Torquata. (l)
Wrens (*Troglodytes*)	Two species
	Troglodytes Eudon. (m)
	Troglodytes Rutilus. (n)
Titlarks (*Anthus*)	One species.
Manakins (*Pipra*)	Two species
	Pipra Gutturalis. (o)
	Pipra Erythrocephala. (p)

Fissirostres.

Swallows and Martins (*Hirundo*).	Several species.
Goat-suckers (*Caprimulgus*) . .	Four species.
	Caprimulgus Caripensis. (q)
Grosbeaks (*Coccothraustes*) . .	Several species.
	Coccothraustes Rufiventris. (r)
	Loxia Minuta. (r)
	Loxia Jacarini. (s)

(a) Capucin.
(b) Campanero.
(c) Louis-d'or.
(d) Diable-enrhumé.
(e) Vert-vert tête cacao, or brown-headed.
(f) Père-noir, or black father.
(g) Cardinal.
(h) Oiseau bleu, or blue bird.
(i) Bec-d'argent, or silver-bill.
(j) Black thrush; the other species being also known by the name of thrush.
(k) Canary, or serin.
(l) Mountain sucrier.
(m) Rossignol, or nightingale.
(n) Bush nightingale.
(o) Casse-noisette.
(p) Manakin-à-tête-jaune, or yellow-headed.
(q) Guacharro, or diablotin.
(r) Cicle. (s) Sauteur, or jumper.

Passeres.	Conirostres.	Bullfinch *(Pyrrhula)*	One species.
		Cassicans *(Cassicus)*	Three species. *Cassicus Cristatus.* (a) *Cassicus Icteronatus.* (b) *Cassicus Ater.* (c)
		Carouges *(Icterus)*	Three species. *Oriolus Xanthornus.* (d) *Oriolus Icterocephalus.* (e)
		Starling *(Sturnus)*	One species. *Oriolus Ruber.*
		Nuthatches *(Sitta)*	One species. *Neops Ruficauda.*
		Anabates	Several species.
		Sinallaxis	One species. *Sinallaxis Ruficapilla.*
	Tenuirostres.	Picucule *(Dondrocolaptes).* . .	Four species. (f)
		Creepers *(Certhia)*	Several species (remarkable for their brilliant colours). *Certhia Cyanea.* (g) *Certhia Cærulea.* (h) *Certhia Atricapilla.* (i)
		Colibris and Humming-birds	Eighteen species (some of them with the most dazzling plumage).
		Colibris *(Trochilus).* Humming-birds *(Orthorhynchus)*	*Trochilus Superciliosus.* (j) *Trochilus Pectoralis.* (k) *Trochilus Viridis.* (l) *Trochilus Hirsutus.* (m) *Trochilus Mango.* (n) *Trochilus Leucogaster.* *Trochilus Ornatus.* (o) *Trochilus Mellivorus.* (p) *Trochilus Longirostris.* (q) *Trochilus Moschitus.* (r) *Trochilus Bicolor.* (s) *Trochilus Amethystinus.* (t)

(a) Merle-à-queue-jaune, or yellow-tailed corn-bird.
(b) Merle moqueur, or mocking merle.
(c) Merle cavalier, or black corn-bird.
(d) Cassique.
(e) Merle-à-tête-jaune, or yellow-headed merle.
(f) Mangeur de cacao, or cacao-eater.
(g) Grimpereau pieds-rose, or pink-footed grimpereau.
(h) Vert-de-gris.
(i) Vert-vert-à-tête-noire, or black-headed vert-vert.
(j) Supercilious humming-bird, or brin-blanc.
(k) Hausse-colvert, or green humming-bird.
(l) Vert-pré.
(m) Colibri balisiers, or hirsute humming-bird.
(n) Plastron, or mango.
(o) Huppe-col, or tufted-necked.
(p) Jacobine.
(q) Carmine.
(r) Rubis-topaze, or ruby-crested.
(s) Sapphire-emerald.
(t) Amethystine.

Grallatoriæ.	Cultrirostres.	Courlan *(Ardea)*	One species.
			Ardea Scolopacea. (r)
	Pressirostres.	Plovers *(Charadrius)*	Two species.
			Charadrius Pluvialis. (o)
			Charadrius Hiaticula. (p)
		Savacoo *(Cancroma)*	One species.
			Cancroma Cochlearia. (q)
	Gallinaceans.	Yacou *(Penelope)*	One species.
			Penelope Pipile. (k)
		Tinamoo *(Tinamus)*	One species. (l)
		Pigeons *(Columba)*	Ten species.
			Columba Speciosa. (m)
			Columba Cinerea. (n)
Passeres.	Syndactyles.	Mot-Mot *(Prionites)*	One species.
			Prionites Brasiliensis. (a)
		King-Fishers *(Alcedo)* . . .	Two species.
			Alcedo Alcyon.
			Alcedo Americana.
		Jacamars *(Galbula)*	One species.
			Galbula Paradisea. (b)
		Wood-Peckers *(Picus)*. . . .	Five species.
		Cuckoos *(Cuculus)*	Four species.
			Cuculus Cayanensis. (c)
			Cuculus Cayanus. (d)
			Cuculus Naevius. (e)
		Couroucoui *(Trogon)*	Three species.
			Trogon Viridis. (f)
			Trogon Collaris. (g)
		Anis *(Crotophaga)*	Two species.
			Crotophaga Major.
			Crotophaga Ani. (h)
		Toucan *(Ramphastos)*	One species.
		Maccaws *(Aras)*.	Two species. (i)
		Parrots *(Psittacus)*	Two species.
		Paroquets *(Cornurus)*	Two species. (j)

(a) Voutou.
(b) Jacamar.
(c) Petit coucou manioc, or small manioc cuckoo.
(d) Grand coucou manioc.
(e) Trinité, from its note.
(f) Couroucou ventre-jaune, or yellow-bellied cuckoo.
(g) Couroucou ventre-rose, or pink-bellied Cuckoo.
(h) Merle corbeau, or tick-bird.
(i) Blue maccaw and red maccaw.
(j) Blue-headed perroquet and perruche-aux-sept-couleurs, or the seven-coloured perroquet.
(k) Paju, sometimes called the *wild turkey.*
(l) Quail.
(m) Ramier ginga, or speckled ramier.
(n) Ortolan bleu. Our pigeons are divided here into ramiers (2 spec.); doves, or wood-pigeons (5 spec.); and ortolans, or ground-doves (3 spec.)
(o) Golden plover. (p) Ring plover.
(q) Boat-bill. (r) Crajo.

Grallatoriæ.	Cultrirostres.	Herons *(Ardea)*	Nine species.
			Ardea Major. (a)
			Ardea Egretta. (b)
			Ardea Garzetta. (c)
			Ardea Leucogaster. (d)
			Ardea Tigrina.
			Ardea Lineata. (e)
			Ardea Nycticorax.
			Ardea Sexcetacea. (f)
			Ardea Agami. (g)
		Wood-Pelican *(Tantalus)* . .	One species.
			Tantalus Loculator. (h)
		Spoonbill *(Platalea)*	One species.
			Platalea Aiaia. (i)
	Longirostres.	Ibis *(Ibis)*	One species.
			Scolopax Rubra. (j)
		Curlews *(Numenius)*	Two species.
			Scolopax Armata. (k)
			Scolopax Phæcopus. (l)
		Snipe *(Scolopax)*	One species.
			Scolopax Gallinago. (m)
		Godwit *(Limosa)*	One species.
		Sandpipers *(Calidris)*	Five species.
		Sanderling *(Arenaria)* . . .	One species.
			Charadrius Calidris.
		Turnstones	Two species.
			Tringa Interpres. (n)
		Chevaliers *(Totanus)*	Six species.
			Totanus semi-palmatus. (o)
		Grallus	One species.
			Hemantopus Charadrius.
	Macrodactyles.	Jacana *(Jacana)*	One species.
			Parra Jacana. (p)
		Kamichi *(Palamedea)*	One species.
		Rails *(Rallus)*	Eight species.
			Rallus Longirostris. (q)
			Rallus Stolidus. (r)
		Water-hens *(Fulica)*	Two species.
			Gallinula Chloropus. (s)
			Porphyrio Tavoua. (s)
Palmipedes.	Divers.	Grebe *(Podiceps)*	One species.
			Podiceps Carolinensis.

(a) Aileronne. (b) Garce. (c) Tufted egret. (d) Blue egret.
(e) Crabier de montagne, or mountain crab-eater.
(f) Crescent crab-eater.
(g) Agami.
(h) Soldat, or soldier.
(i) Roseate spatula.
(j) Flamant, or flamingo.
(k) Crooked-bill.
(l) Bécard.
(m) This snipe is identical with that of Europe.
(n) Sea plover.
(o) Aile-blanche, or white-wing.
(p) Surgeon.
(q) Poule-de-bois, or wood-hen.
(r) Several species, called here poules savanne, or savannah hens
(s) Seal water-hens.

Palmipedes.	Longipennes.	Coot *(Podoa)*	One species.
		Sea-swallows *(Sterna)*	Three species.
		Scissor-bill *(Rhynchops)* . . .	One species.
			Rhynchops Nigra. (a)
	Totipalmatæ.	Pelicans *(Pelecanus)*	One species.
		Cormorant *(Halieus)*	One species.
			Halieus Carbo.
		Man-of-war-bird *(Tachypetes)* .	One species.
			Pelecanus Aquilus.
		Booby *(Sula)*	One species.
			Pelecanus Sula.
		Darter *(Plotus)*	One species.
			Plotus Anhinga.
	Lamellirostres.		Ten species.
		Ducks *(Anas)*	*Anas Clypeata.* (b)
			Anas Americana. (c)
			Anas Marila. (d)
			Anas Dominica. (e)
			Anas Moschata. (f)
			Anas Autumnalis. (g)
			Anas Viduata. (h)
			Anas Discors. (i)

In glancing over this catalogue, it will be observed that the raptorial order is largely represented, in proportion to the extent of the island; for, not only is the number of species not inconsiderable, but one of them, the *Spizaetus Ornatus*, is of a pretty large size: the fact of their number is undoubtedly a consequence of the facility afforded these birds in the procuring of food. They prey upon the smaller species which abound in the island, and feed upon their young or their eggs. Bats, which are far from being scarce, supply food to one of our falcons, and a few species feed upon reptiles and our largest insects: the black-backed goshawk is constantly on the watch, along the sea shore and the banks of rivers, ready to seize upon the fish which form its main aliment.

The insectivorous tribes, however, are the true representatives of our ornithology, as regards number. There are so many species which feed upon insects and their larvae, that it may be asked

(a) Bec-en-ciseaux, or scissors-bill.
(b) Shoveller, the same as in Europe.
(c) Jensen.
(d) Millouin.
(e) Vingeon.
(f) Musk-duck, but commonly and erroneously termed Muscovy-duck.
(g) White winged ouikiki, or vicissi.
(h) Ouikiki bouriqui.
(i) Crescent-teal.

with much reason, what would become of our vegetation, of ourselves, should these insect-destroyers disappear? Everywhere may be perceived one or other of these insectivora in pursuit or seizure of its prey, either on the wing, or on the trunks of trees; in the coverts of thickets, or in the calices of flowers. Whenever called to witness one of those frequent migrations, from one point to another, so often practised by ants, not only can the *Dendrocolaptes* be seen following the moving trail, and preying on the eggs and the ants themselves, but even the *Tanagra Nigerrima* abandons his usual fruits for this more tempting delicacy. Our frugivorous and baccivorous genera are also pretty numerous, and most of them are so fond of insect food, that they unite as occasion offers, with the insectivorous tribes.

Marsh birds (*Grallatoriæ*) are remarkable, not only for their number, but also for their large size: the kamichi is the size of a turkey; the heron (*Ardea Americana*) stands more than four feet when erect; the great egret (*Ardea Major*) is as tall, and the tantal, of the same height, is larger in body.

As to the granivora, the number of species is scarce; and it cannot be otherwise, when the nature of our vegetation is taken into consideration.

We have eighteen species of humming-birds; and this large variety of these charming creatures which draw from the calices of flowers, the honey-dew which affords their sustenance, proves that the country is not altogether destitute of flowers. They also share in the prey of the insectivora, and whilst sucking their nectareous aliment, they swallow together with it, the small insects that have been entangled in the viscous liquor which, by agglutinating their wings, has rendered their escape impossible. It is scarcely probable that these insects are found accidentally in the digestive tube of humming-birds, as have thought those who would have their sole food to consist of the juice of flowers: on the contrary, they would appear to constitute the essential part of their alimentary diet. On opening the crop of a humming-bird, one is struck with the large quantity of small flies it contains; they are met with also, and in as great a number, in the stomach of the nestlings that are wholly fed by the parent bird. Besides, are there really in the juice of flowers all the organic and inorganic elements which are indispensable in restoring the losses of organism? Doubtless the insects must

contain those elements as a supply for the bird. The juice of flowers would then be a purely respiratory aliment; and there is no ground for wonder at the large consumption of this aliment by the humming-bird; for it spends in some measure the greatest portion of its existence in the open atmosphere. Almost ever on the wing, and moving with that quick motion which renders it almost invisible, it repairs from flower to flower; and whilst apparently most stationary during the suction of its food, the motion is in reality the most excessively rapid. Such short incessant strokes of the wing on the air, must necessarily cause a more rapid circulation of the blood, a more active respiration, and, as a consequence, must require a larger amount of materials suited to combustion.

It has been pretended that these birds hover about spiders' webs with a view to despoil them of the insects entangled therein. I have often witnessed humming-birds thus manœuvring, but never observed them seizing insects; they were only purloining a few threads wherewith to aid in the weaving of their nests.

On reflecting on the circumstances which thus regulate the alimentation of our birds, we are led to a first consequence, viz., that this colony being still new, and subject therefore to the changes which time may produce, our ornithology will hereafter lose its present characteristics. Not only will the number of species diminish in proportion to the reduction of alimentary resources, but new species will perhaps be naturalised, as new cultures are introduced. A species of grosbeak seems already to have become one of our guests, since the cultivation of rice has been introduced.

A second consequence arising from the preceding, is, that many genera cannot of necessity observe any permanency as regards their *habitat*. Frugivoras and baccivoras are met with wherever fruits and berries may answer their requirements. Hence, one of the means employed by the sportsman for procuring certain species: knowing that, at such periods, and at such spots, certain trees will attract certain species, he resorts thither for the purpose of shooting them; of these trees is the *Gommier*, the haunt of ramiers, and the *Pois-doux* (*Inga*), of parroquets, &c.

The insectivorous tribes are likewise largely distributed; but as fruits and certain berries are rarely found but in the neigh-

bourhood of inhabited places; as insects seem even to swarm in greater abundance in the skirtings of wood-lands, never will the chirpings and twitterings which announce the coming dawn, be heard amidst the density of the forests. At all times, there reigns in those solitudes, a stillness which one would be far from expecting.

There is more, however, to be considered in this flitting life, on the one hand, and in this attachment to cultivations on the other, than the mere support of existence. Certain species, though frugivorous or baccivorous, are not met with except in very remote and wooded localities; they never approach our abodes. If some species seem to shun the solitude of the wood-lands, and do not dread the neighbourhood of man, it is quite the reverse with others, though belonging to the same genus. The *Diable enrhumé* (*Tanagra Mexicana*), the *brown headed Vert-Vert* (*Tanagra Gyrola*) are met in the fruit and berry trees which grow near our clearings; whilst another tanager (*Arrivant*) flies to conceal its beautiful plumage in the depths of forests. One of our blackbirds enlivens our copses, whilst another (*Turdus Flavipes*) seems to avoid our abodes.

The *Troglodytes Eudon* is so much attached to the society of man, that it never deserts him, and it is even under his roof that it establishes its nest. Never does its note salute the ear of the wanderer in the forest. More than once, after a long jaunt, and thinking myself still near the starting point, I have been quite surprised at finding myself approaching the end of my journey—the song of a wren being a sure sign I was in the proximity of some inhabited place. And yet the other species is met with everywhere.

Certain flowers which are eagerly sought by some species of humming-birds, are far from being scarce in these localities which suit their growth: and yet it is well known that in order to procure these humming-birds, the naturalist must seek them in other and well-determined spots.

The black-headed *Urubu* is found in all parts, whilst the red-headed species is never seen in towns, but is met with only at a distance in the country. The former may be said to be mainly urban, and the latter rustic; still, their habits are the same; and if I can depend on information which has been furnished me, there are parts of the neighbouring continent, in the towns of which

none but the red-headed urubu is to be seen. The former swarm in Port-of-Spain, and, from the tops of houses they are constantly on the watch for the smallest prey which may fall in the streets; but never is there seen among them a red-headed urubu. Whenever, in the country, some dead animal attracts the vultures, both species assemble in a band, and seem to act on good terms.

The *habitat* of birds, therefore, is not determined by the alimentary substances which suit them: there are other secondary but indispensable conditions which escape observation.

Nidification.

The study of the constructive instinct in birds would undoubtedly afford much gratification to any one who might devote attention to the subject; but nothing is more difficult than an investigation of that which refers to this part of Ornithology. The luxuriance of our vegetation is such that, wherever forest-trees have yielded to brush-wood and its accompanying variety of plants, the foliage forms a dense screen, impervious to the sight, and concealing within its recess every possible object; in fact it is by mere chance that even a close scrutiny can discover the fabrics which so many species repair thither to construct, and dispose with such artistic skill and care. Even when they are built on large trees, the foliage invariably shrouds them from the eye. There are, however, a few species, such as the *carouge* and the *cassique* which seem to avoid those retreats, and, in preference, pend their nests to the extremity of branches, and in the full glitter of the sunbeams. Many pairs of the above congregate at the season of laying, and make choice of the same tree. They give to their nests the shape of an elongated pear, or rather of a long pouch, the smaller end hanging from the branch by means of a few threads from the tissue of the nest itself. The entrance is lateral, and a little beneath the point of attach—the whole being light and graceful, and recalling to the mind that admirable instinct of the feathered tribe, which we cannot but admire in such constructions. Nothing, however, equals the effect which the assemblage of those pendent nests produces; forming as they do to the tree, another sort of covering which is as agreeably striking as the foliage itself.

As to the humming-birds' nests, they are perfect miniatures; the frame-work is of dry grass-blades, bound together by spiders' threads; there is but little variation in their configuration—the minuteness of the fabric, and the perfection of the workmanship, alone calling for deserved admiration.

There is a bird—the *Sinallaxis Ruficapilla*, only four inches long, that constructs a nest which, if differently shaped, might accommodate a lodger of twenty times its size. It is difficult to conceive how so small a creature can carry the twigs which serve in the construction, they being several lines in diameter; and what is still more striking, these twigs hold together by mere interweaving; no bond unites them, and yet they are twisted into a shape which reminds one of a gourd—there being left a lateral and upper opening, which is another marvel in this astonishing construction. The sinallaxis begins by the framework, and the framework alone constitutes the whole nest. What an amount of instinct must the bird develop in order to attain its object, particularly in laying down and fitting together the first pieces of its edifice!

Many nests, instead of being laid on the bifurcation of branches, are hung in a manner as light and as frail as the sword of Damocles. Undoubtedly, this is a precaution taken with a view to protecting the young against snakes, in the same manner as the nests buried in bushes and the dense foliage of trees, escape the eye of the birds of prey. I do not, however, understand how birds can protect their nestlings against ants; for, so large is the number of these insects, in our climes, that it would seem as if everything must become their prey.

Migration.

All our birds do not make a permanent stay in the island; and, as regards certain species, there are two very distinct annual migrations. When the wet season has fairly commenced, the following alight on our shores; sandpipers, knots, plovers, &c.; they are emigrants from South America. These birds swarm in the extensive *llanos*, or plains, which skirt the Orinoco; as soon as these become inundated, their inhabitants are compelled to depart elsewhere in search of food. Several species of ducks follow the example of those Grallatoriæ. After the rainy season

is over, all return to the continent, save a few individuals which continue to frequent our marshes.

In November, other species appear. These are principally ducks, viz., the poachard, shoveller, jansen, &c., that seek a shelter against the cold of North America.

There are other species whose migrations cannot be accounted for in the same satisfactory manner. Dating from July, the *Tyrannus Savanna* arrives here from Venezuela, in immense troops, and leaves us in October. These birds feed on insects only, and surely such a prey cannot be wanting on the continent. Similar is the case of the speckled ramier, which comes in, and returns at the same periods; and yet the berries on which it feeds, must also be abundant on the mainland.

Game.

As an article of food, our birds exhibit one main characteristic—they are utterly deficient in *flavour*. The ramier, dove, quail, and parrot, which are occasionally served on our tables, do not, in any way, recall to one's mind the flavour of the partridge; and the amateur must forget that ordinary stimulant of appetite, in order to relish that *something* which makes a young parrot a delicious dish. The speckled ramier is much prized, and with good reason; and the ortolan is also very acceptable to the epicure: as far as these are concerned, however, we yield the palm to Europe, to claim it, notwithstanding, for our ducks. The individuals which come from South America particularly, leave nothing more exquisite to be desired; those which migrate from North America, are not all so excellent; such as they are, nevertheless, they are far superior to those of the old continent.

Among the smaller species, several have been remarked by connoisseurs: the *Tyrannus Savanna* is a ball of fat, and a *brochette* of these small birds yields, in no one particular, to the *becafico* of Europe. Some of our merles, when feeding upon aromatic berries, possess a *goût* which is not inferior to the flavour in which they are deficient.

I ought not to pass unnoticed the guacharo (*Caprimulgus Caripensis*). The young ones, which are literally a mass of fat, are highly praised and relished by amateurs. I have on several occasions partaken of them, but must candidly confess that, in

consequence of a certain cockroachy flavour, which is the reverse of tempting, I have, for a long time, discarded that dish.

There is, however, in this island, a bird which verifies the proverb, "All is good that is rare,"—this is the yacou, or pajui. With all the good qualities of the pheasant, it possesses besides the advantage of being far more juicy; and any one who has once been treated to this truly *recherché* gallinacean, only regrets that it is not more plentiful. Thus, some species cause us to be unmindful of that in which they are all deficient, viz., the *flavour*. Whatever be their defects, however, the main deficit is that they are not prepared by some *Vatel;* for, when in Europe they praise the snipe, they really mean that they have good cooks.

Note and Song.

It is well known that song is the heritage of the birds of the north; whilst under our brazen sky, the beauty and richness of plumage replace the melodious notes of the nightingale. True, the ear is not greeted by notes warbled in simple trills, or in full-toned cadences: but the eye cannot be satiated with admiring those colours, the variety of which can alone vie with their vividness. The form itself seems to have been sacrificed, and nature's efforts concentrated, in painting the plumage of our birds with the prism's hues. None of them possess the slimness of the wagtail, the fairiness of the titmouse, or the grace of the fauvette; there is no charm in their movement, none in their flight: and nothing in them recalls to the mind the skylark hovering on high above its nest. Every gift has been lavished on their gorgeous attire, the brilliant plumes of which often add somewhat more of characteristic to our birds. The tufted humming-bird, besides the tuft, wears on each side of the head, slender feathers, maculated at their extremity with spangles of the brightest emerald. The heron-agami can, at pleasure, erect its long neck so as to display those fine, long, and narrow blue feathers which, in their crescent-like layers, present an admirable *ensemble*. Even when we direct our attention to the birds inhabiting Asia, Africa, or Australia, and which unite singularity to their richness of plumage, we find that ours have something markedly distinctive, whenever a comparison is instituted between them and birds of metallic hue. Everywhere else there is some really metallic reflection of the plumage,

whilst here, there is nothing more dazzling than our ruby-crested humming-bird. On the one hand, the metal, on the other, the gem, reflects the light.

Let us acknowledge, nevertheless, that this luxuriousness does not speak to the imagination, does not reach the heart, does not move it. Our admiration is kept alive, but we yet commune with this world, which it is so sweet to forget in the forest recess, whilst the ear imbibes the plaintive notes of the nightingale!

Our forests are not, however, altogether silent, nor our copses either. Often in the depth of our woods, our attention is awakened by sound which reminds us of those of a bell. Hark! those two or three notes loudly and several times repeated, are those of the averano, calling forth its mate from the summit of some tree towering to the clouds. The metallic tone, and the ampleness of that bird's call, produce a complete illusion; it resembles the toll of a far ringing bell; wherefore, the Spaniards have given it the name of *campanero*, or bell-ringer. It perches chiefly on trees which clothe the mountain-sides, and the sound of its voice re-echoed by the adjoining mountains, so intermingle, that it becomes difficult to find out precisely the spot occupied by the bird itself. This, though a purely physical effect, the vulgar assigns to the instinct of the averano, which thus modifies its note, in order the better to conceal its retreat.

Here, as elsewhere, our doves pour forth their tender moan, thus rendering still more melancholy the stillness of our woods: one of them particularly, the partridge, imparts to its cooing the impress of sadness; it resembles the complaint of suffering humanity, so complete is the illusion.

The early morn is welcomed by the qu'est-ce-qui-dit (*Tyrannus Pitanga*), whose song, or rather cry, though containing nothing of melody, yet rings in sounds of pleasantness around our dwellings. This cry is clear, and is answered by the voices of several others of these birds, which are the better heard, as they perch at the extremity of some branch. Sometimes the united notes become a regular uproar, though far from being unpleasant. We hear, without attending to them, the twittering of other smaller birds that also welcome the dawning light. But our attention is still attracted by the gay tumult of the qu'est-ce-qui-dit; there is a cheerfulness in their cry, and man is never more disposed to be cheerful than in the morning.

In the woods, curiosity alone will impel one to ascertain the cause of a singular noise which can be ascribed to a bird, only on sight; it is made by the *casse-noisette*, or nut-cracker (*Pipra Gutturalis*). These small manikins crowded on a shrub, are continually on leap from the branches to the ground, and from the ground to the branches. During these short passages of a few feet, they emit that noise, which is a short and sharp rolling produced with the aid of their bills. So great an uproar on the part of such small birds is not easily understood, and less so their end in producing it; for, the ordinary note or call uttered by them under all other circumstances, has in it nothing particular. At those periods, when joy alone seems to move them, they remove from the ground everything which lies on it, so as to make a perfect clearance of a small spot which is always circular. This is again an enigma; and yet this manœuvre they will continue for hours entire.

There is a bird, the song of which announces man's dwelling, viz., the *Troglodytes Eudon*, which is a wren, but is called here *rossignol*. Though no rival of the European night songster, yet it is the only one among our birds that may induce one to think there must be a charm in listening to a bird pouring forth the harmony of its notes. However, it is respected much less for its melody than for its habits, which attach it to our dwellings: a sort of veneration is even felt for the little creature, which is shown by its very popular name, for it is called "Oiseau du Bon-Dieu," or God's bird. Several nocturnal birds of prey disturb the stillness of night by their shrieks, and in those shrieks there is here, as everywhere else, something so dismally lugubrious as to cause the unfortunate to shudder in his hut; for, to him they are ominous of death. But it is rather curious that a diurnal bird, the trinité (*Cuculus Naevius*), sometimes makes its cry to be heard during the night: whilst its companions of the day are in deep repose, it wakes on the branch, and each hour gives forth its notes, which night renders querulous, but which in turn, make night more mournful still.

Some other particulars may be remarked in the call of our birds; but as a characteristic of this point of ornithology, they may be said to whistle rather than sing, whilst some of them produce with their bill singular noises. Thus our cassique, by

rapidly moving its bill along the quills of its wing-feathers, produces a noise which must strike any one who hears it for the first time ; this it repeats frequently. Whenever perched on a branch, it indulges in a chattering which imitates, even to deception, the mewing of a cat, the light laughter of children, the cackling of hens, the whistling of man, &c. It is a treat, surrounded by a few of these birds, to listen to the different modulations into which they are capable of inflecting their voice.

REPTILES.

THE four grand divisions of reptiles have their representatives in the island, viz., the chelonia, the sauria, the ophidia, and the batrachians. Of these a few are to be met with in the other West India Islands, whilst many are common to Trinidad and the neighbouring continent, but none seem to be peculiar to this island alone.

CATALOGUE OF REPTILES, BY DR. J. COURT.

ORDER I.—CHELONIA.

FAMILY I.

Land Tortoises *Testudo*. 2 species.
Testudo Tabulata.(a)
,, *Carbonaria*.(a)

FAMILY II.

Fresh-water Tortoises . *Emys*. 2 species. (b)

FAMILY III.

Sea Tortoises *Chelonia*. 3 species.
Testudo Mydas. (c)
Testudo Marina. (d)
Testudo Imbricata.(e)

ORDER II.—SAURIA.

FAMILY I.

Crocodilians . *Alligator*. 1 species.
Alligator Sclerops.(f)

FAMILY II.

Lacertidæ . *Geckos*. 2 species.
Platydactylus Pheconyx. (g)
Hemidactylus Mabuia. (h)
Iguanidæ. 4 species.
Polychrus Marmoratus. (i)
Anolius Alligator.(j)
Iguana Tuberculata. (k)
Hypsibates Agamoides. (l)
Salvator. 1 species.
Salvator Merianæ.(m)
Ameiva. 2 species.
Ameiva Vulgaris. (n)
Ameiva Major. (n)
Chalcides. 2 species.
Amphisbaena Fuliginosa. (o)

(a) The land tortoises are known here by the name of morocoy, and (b) fresh-water tortoises by that of galapa.
(c) Common turtle. (d) Caouane. (e) Caret, or tortoise.
(f) Alligator, or babiche.
(g) Plantain Mabuia, or mabouia des bananiers.
(h) Wall Mabuia, or mabouia des murailles.
(i) (j) Generally considered here as chameleons.
(k) Common guana, or lésard.
(l) A lizard, remarkable for an inflated head and spinous or pencilled-like groups on the vicinity of the ear.
(m) Mato, or mate. (n) Ground anolis, or lizards.
(o) Double-headed serpent, or serpent-à-deux-têtes.

FAMILY II.—*continued.*
Amphisbaena Alba. (a)
Scincoideæ. 1 species.
Eumeces Spixii. (b)

ORDER III.—BATRACHIANS.
Raniforms. 1 species.
PseudisMerianæ. (c)
Hylæforms. Several species.
Hyla Viridis. (d)
Bufoniforms. Several species.
Bufo Strumosus. (e)
Pipæforms. 1 species.
Pipa Americana. (f)

ORDER IV.—OPHIDIA.
Non-venomous. Several species.
Tortrix. 1 species.
Tortryx Scytale. (g)

ORDER IV.—*continued.*
Boa. 2 species.
Boa Constrictor. (h)
Boa Murina. (i)
Coluber. Several species.
Coluber Variabilis. (j)
Dendrophis. 2 species.
Dendrophis Liocercus. (k)
Dendrophis Aurata. (l)
Venomous. Several species.
Elaps. 1 species.
Elaps Corallinus. (m)
Trigonocephalus. 1 species.
Trigonocephalus Jararaca. (n)
Crotalus. 1 species.
Crotalus Mutus.

The reptiles mentioned in the above catalogue, are not met with in all parts of the country indifferently. A few seem to prefer the vicinity of man's habitation—such as the ameivas, geckos, lizards; the clibo, toads, and some tree-frogs; also the mato or safeguard, and smaller lizards. Others, as the land and fluviatile tortoises, are encountered in the high woods; and some are almost universal, of which are the frogs, alligators, iguanas, boas, crotals, and other serpents, provided, however, the locality suits them. The alligator, for instance, shows a preference wherever there are pools of stagnant or dormant waters; they are, nevertheless, particularly numerous at Mayaro, and in the county of Caroni. The iguana generally delights in the vicinity of the sea-

(a) Double-headed serpent, or serpent-à-deux-têtes.
(b) A pretty sleek little lizard, to be seen on trees, of a brown colour on the back and greenish below; also with blackish points scattered along the back, and a brown band on each side, imperfectly terminated.
(c) Frog-fish, paradoxal-frog.
(d) A beautiful frog of rather large size, green above, and a light pink beneath.
(e) Our common crapaud.
(f) A large ugly frog, caught in the Bejucal.
(g) Rouleau.
(h) Macajuel.
(i) Huillia.
(j) Clibo, or cribo noir.
(k) Ash-coloured horse-whip, or rigoise-argentée.
(l) Green horse-whip, or rigoise-verte.
(m) Coral-snake, or serpent-corail.
(n) Cascabel.

shore, and sandy spots, where it can deposit its eggs in safety; and large numbers of them are met with on the Bocas islets, and at the mouths of rivers, particularly along the eastern coast. The boa constrictor, or macajuel, seems to prefer low damp places, and the boa-murina, or huillia, never strays far from the river or pond which it has selected as its abode. They are specially plentiful in the Oropuche river, and its affluents, viz., the Cunapo, Sangre-grande, and Sangre-chiquito, nor are they scarce at Cedros. The mute crotal, or mapepire, shews a predilection for high grounds, whilst the cascabel, or trigonocephalus, is commonly met with in damp, low lands. The only specimen of pipa which I have seen, came from the Caroni Savannah, and that of the paradoxal-frog from Cedros.

The sea-tortoises, or turtles, deserve no peculiar notice. The morocoy and galapa live on soft plants, fruits, and insects; the morocoy seems to be particularly partial to the wild-plum, which it swallows entire; during the ripening season, several of them may be met with under one tree. Being very slow in their movements, the morocoy and galapa are easily caught; if near a pond or river, however, the galapa at once dives and escapes under water. Dogs often detect the morocoy by barking at it; also when coupling, they emit a peculiar grunt which likewise serves to discover them. I may here mention a few particulars regarding the capture of turtle. They are caught either in nets, or on the beach when crawling ashore to deposit their eggs. For this purpose, they come forth at night, and are watched by the catchers. As soon as a turtle is aware of any danger it immediately takes to the sea. The safest plan in that case, is to gain the seaward of the animal, and seize it by the fore-flaps; it then continues to urge against the catcher, and is, with its own aid, easily turned up. If approached and held by the side, it makes a powerful resistance, and in the struggle throws up a cloud of fine sand, which almost blinding its antagonist, causes him to lose his hold. A very ingenious contrivance is sometimes adopted to bring a turtle of the largest size from a distance. One of the fore-flaps is secured to the carapace, or shell, with a line, and the animal placed in the sea, the bound flipper shoreward, so that it is thus easily led along the beach to any distance. The turtle may also be harpooned whilst rising to, or laying on, the surface, and sometimes it may even be taken asleep in that position.

The common iguana, but particularly the mato, are not to be

rejected from the table. Iguanas are either shot on trees, or caught when laying; their fore and hind feet are then tied behind, so that they cannot move; they can live many days without food. Matos are hunted down with dogs, and taken either in holes, or in some hollow tree, wherein they seek a temporary refuge; the best mode, however, is shooting them; they are then watched about mid-day in some copse or bushy spot, whither hens are accustomed to lead their broods, or, during the dry season, along the dried beds of ravines, where they lurk for fish. The iguana lives on insects, eggs—those of the tortoise principally—young birds, and the tender buds of plants; the mato is exclusively carnivorous, and fish, young birds, mice, insects, eggs, and even small snakes become its prey; it generally lays in the nests of termites. Both these saurians are excellent divers, and can remain for a long time under water.

Some of our serpents attain very large dimensions. The boa-constrictor may reach the length of twenty-two feet, and will swallow agutis, lapos, and young deer; a huillia killed in the river Cunapo measured seventeen feet eleven inches; it however attains to twenty and even twenty-four feet. The clibo, or cribo, reaches from ten to twelve feet, and a mute crotal, or mapepire, killed at Couva, and now in the possession of Dr. Court, measures eleven feet. These are the largest species.

It is well known that snakes live upon such animals as they are enabled to seize; this prey—generally taken by surprise—consists of small quadrupeds, birds, and even other reptiles. Rats and opossums are the great treat of the macajuel; and as many as seven of the latter were once found in the stomach of a boa-constrictor. The huillia preys on even larger game—such as the lapo, young deer, &c. A gentleman being once engaged in the chase, near the river Oropuche, a young deer was started, and its distressed bleating soon proved it was caught. On approaching to the river, whence the cries arose, he saw the animal struggling in the water, and at first was unable to account for its movements; but, on a nearer view, he ascertained that it was held in the folds of a young huillia; both animals were killed, and the serpent was found to measure only seven feet and a few inches.

The rigoise, or horse-whip snake, is generally met in thick copses or under brush, and may be seen gliding along the tops of the crowded and interlaced plants. The cascabel is found in low,

damp localities, and along river borders, where it selects its abode among the clumps of bamboos. The mapepire shews a preference for high grounds, and is very common in Mayaro, as also between Caroni and Tamana, near the river Tumpuno. It is often found together with the lapo in the same hole ; and, in certain localities, hunters are obliged to act with great caution, in order to protect their dogs or themselves from its poison fangs. There is, I believe, no authentic record of a lapo having ever been found killed in its recess by a mapepire.

These serpents, as well as the coral snake, are highly venomous; in fact the mapepire is quite as formidable as the rattlesnake. The description given of the habits and exterior appearances of the *Crotalus Mutus*, by Schlegel, and of the *Lachesis Mutus*, by Dumeril, accurately corresponds to our mapepire ; and the *Trigonocephalus Jararaca*, and the *Bothrops Jararaca*, by the same authors, to our cascabel. Dr. Court possesses three specimens of the *Trigonocephalus Lanceolatus*, or the Martinico's fer-de-lance, and of the Trinidad cascabel and mapepire, respectively, —in which the characteristic differences of these three serpents are very well delineated. The scales of the mapepire are oval, and carinated as those of the others, but they are not so flat, and there is besides, on each a prominence, giving it the appearance of a pine-apple eye ; hence its local name of " Mapepire Ananas" ; head triangular and thick. The head of the Fer-de-lance, or lance-headed trigonocephalus, is more elongated, and more so that of the cascabel, particularly the muzzle. The mapepire may almost be said to be torpid, or at least so sluggish and indolent as to require provocation before it acts on the offensive ; but once roused, it is very fierce, and will spring on, or even pursue its enemy. This serpent generally warns by a peculiar rattling sound, caused by the rapid movements of its tail—probably against the dry leaves, as it has no articulated rattle, like that of the *Crotalus Horridus*, but only a white horny spur, and may be considered as establishing a link between the trigonocephalus and the crotalus. The mapepire is much more dreaded than the cascabel. Though very sluggish, this latter serpent shews occasionally much determination, and after inflicting a first wound, it sometimes immediately recoils for another attack.*

* The ground-colour of the cascabel is brown, with deep transversal stripes; the belly has a tesselated appearance, black squares symmetrically alternating with others of a lighter colour.

I may repeat here, what Prince de Neuwied says of the coral snake—that it can be taken and handled without any danger; children very often playing with this viper, encircling it round the neck. I have myself, more than once, carried about corals, not suspecting they were venomous. The apparent innoccuity of the coral arises from the peculiar conformation of its head and mouth; the head is of the same growth with the body, and not separated by a distinct neck; nor can it, on account of its anatomical organisation, open its jaws sufficiently to seize and bite any bulky body. It is nevertheless highly poisonous. The clibo and rigoise are very common; of the former, there are three species or varieties—the black or speckled, the yellow-bellied, and the yellow-tailed; the first is of a glossy lead colour, and the under parts of a light yellow, with dark stripes; the second, of a deep lead colour above, and a fine yellow beneath; the body of the third is also of a lead colour, and the belly, together with the tail, of an orange tinge; they generally attain the same dimensions, though the last may be found of a somewhat larger size.

The rigoise, or whip-snake, would appear to pertain to the tribe of poison serpents, but its bite would not be deadly; it is called *rigoise, or horse-whip*, not only on account of its long slender form, but also from the current belief among the negroes, that it uses its tail as an instrument for flogging its antagonist.

Besides the above-mentioned, and well known serpents, there are several others which we have not been able to classify, from the many difficulties which attend the study—among others, the mangrove-cascabel or *dormilon;* it has the greatest resemblance with the true cascabel, but, on all accounts is not poisonous; it is very common all along the lower Caroni, and may often be seen sluggishly extended on some branch that stretches over the river. A small serpent, from twelve to sixteen inches in length, is met with occasionally in courtyards, and among rubbish, also in pasture-grounds; it is called the ground-snake, and is probably a cœcilia; another smaller one, provided with a sting at the end of the tail, may possibly be the *Stenostoma Albifrons* of Dumeril. The *Cuaïma* is reported as being a deadly viper; I have never seen it, and only mention it on hearsay.

Besides the toad here mentioned, there are several other species, differing not only in size, but in general configuration. Of real frogs I know but one, the paradoxal or fish-frog, so

remarkable for the large size of the tadpole, which is several inches long, and has some resemblance to the cascaradura; its body—which is smooth and not scaly—exhibiting oblique bands exactly like those of that fish. It still retains the tail sometime after the four limbs have grown, which gives it the grotesque appearance of a fish provided with a toad's feet; hence the erroneous impression, among the vulgar, that the cascaradura is ultimately metamorphosed into a toad. There exist in the colony many tree-frogs, or hylæforms; besides the one already mentioned, I know a very small one of a brown colour above, and gray beneath; another, of nearly the same colour, but much larger, and found in cacao plantations, generally sticking on the inferior surface of some leaf (*Hyla Xerophylla ?*); a third, of a milky colour (*Hyla Lactea?*).

The pipa is a large batrachian, very remarkable on account of its singular form, but more, and chiefly so from its mode of generation. The female carries on its back the eggs or semina which the male has placed there; a sort of inflammation is the consequence of such application, and each egg becomes as imprisoned in a cell, which gradually increases in size, so as to accommodate the growth of the semen. When hatched, the young escape from the cells, the back of the mother remaining for some time as if honey-combed.

A pretty little lizard, about four inches long, which we have not been able to determine, is very common in town, along fence-walls, in the crevices of which it dwells. It is easily distinguishable by its large lustrous eyes, and a bright white streak extending from the point of the muzzle to the extremity of the tail; also by the lighter colour of the neck and head, as compared with the body.

I have also seen a curious little animal resembling an amphisbaena, but having four limbs; it is probably a ceps.

FISHES.

THE great class of fishes supplies many individuals remarkable for their varied forms, their beautiful colours, their habitat, and the benefits which are derived from them as articles of food. I found it impossible to make a detailed list of all the species which inhabit our seas or streams, and ponds; the following catalogue, however, compiled by my friend Dr. Leotand, exhibits nearly all the genera which may be said to belong to the island.

ORDER I.—ACANTHOPTERYGIANS.

FAMILY I.

Percoides.

Centropomus. 1 species.
Centropomus Undecimalis. (a)
Mesoprion. 2 species. (b)
Rypticus. 1 species.
Anthias Saponarius. (c)
Priacanthus. 1 species.
Polynemus. 1 species. (d)
Sphyræna. 2 species.
Sphyræna Barracuda. (e)
Upeneus.

FAMILY II.

Mailed Cheeks.

Prionotus. 1 species.
Dactylopterus. 1 species. (f)

FAMILY II.—*continued.*

Scorpaena. 1 species. (g)

FAMILY III.

Scienoïdes.

Otolithus. 1 species. (h)
Eques. 1 species. (i)
Haemulon. Several species. (j)

FAMILY IV.

Sparoides.

Pagrus. Several species. (k)

FAMILY V.

Menides.

Gerres. 1 species. (l)

FAMILY VI.

Squammipennes.

Chaetodon. 2 species.
Ephippus. 1 species. (m)

(a) Pike, or brochet.
(b) Gruper, or vieille.
(c) Soapwort, or savonette.
(d) Paradise-fish.
(e) Barracuta, or bécune.
(f) Flying-fish.
(g) Vingt-quatre-heures.
(h) Salmon, or saumon. (i) Sea-horse.
(j) Red-mouth or gueule-rouge. (k) Pagres.
(l) Fresh-water pike, or brochet. (m) Horseman.

FAMILY VI.—*continued.*

Holacanthus. 1 species.
Psettus. 1 species.

FAMILY VII.

Scomberoides.

Auxis. 2 species. (a)
Cybium. Several species.
Xiphias. 1 species.
Xiphias Gladius. (b)
Istiophorus. 1 species. (c)
Elacates. 1 species. (d)
Trichiurus. 1 species. (e)
Temnodon. 1 species.
Cheilodipterus Heptacanthus.
Caranx. 5 species.
Scomber Carangus. (f)
Vomer. 1 species. (g)
Zeus. 2 species. (g)

FAMILY IX.

Theutyes.

Acanthurus. 1 species. (h)

FAMILY XI.

Mugiloides.

Mugil. 3 species. (i)
Atherina. 1 species.

FAMILY XII.

Gobioides.

Clinus. 1 species. (j)
Opistognathus.

FAMILY XII.—*continued.*

Gobius.
Gobioides. 1 species.

FAMILY XIII.

Pediculated Pectorals.

Antennarius.
Malthacus.
Batrachus. (k)

FAMILY XIV.

Lobroides.

Labrus. 1 species. (l)
Lachnolaimus. 1 species. (m)
Scarus. 1 species. (n)

FAMILY XV.

Flute-mouth.

Fistularia. 1 species. (o)

ORDER II. — MALACOPTERYGIANS.

FAMILY I.

Cyprinoides.

Anableps. 1 species.
Cobitis Anableps. (p)
Pœcilia. 2 species. (q)

FAMILY II.

Esoces.

Belone. 1 species. (r)
Hemiramphus. 1 species. (s)

FAMILY III.

Siluroides.

Mystus. 2 species. (t)

(a) King-fish, or tassard, and Spanish mackerel, or carite.
(b) Espadon, or saw-fish.
(c) Maman-balaou.
(d) Cod-fish, or morue.
(e) A fish found in ponds and ravines, resembling the lamprey; hence its name of cutlass-fish, or coutelas.
(f) Carangues: the common carangue (*Scomber Carangus*), is the largest and most abundant: the carangue grasse is not so large, but more delicate, as are also the two others; a fifth species is our anchovy, or anchois.
(g) Dories, or lunes.
(h) Surgeon.
(i) Lebranche, large and common mullet.
(j) Gruper, very large, found in rocky places.
(k) Crapaud, or toad-fish. The three genera of this family are known by the name of anglers.
(l) Lippe.
(m) Captain.
(n) Parrot, or perroquet.
(o) Trumpet-fish, or poisson-trompette.
(p) Large-eyed fish, or gros-yeux.
(q) A small fish found in rivulets, and even in wells, in Port-of-Spain.
(r) Gar-fish.
(s) Balaou.
(t) The common cat-fish, or machoiran, and the barbe, an inhabitant of our rivers.

FAMILY III.—*continued.*

Callichthys. 2 species. (a)
Hypostomus. 1 species. (b)

FAMILY IV.

Salmonides.

Hydrocyon. 2 species. (c)
Saurus. 1 species.

FAMILY V.

Clupeæ.

Clupea. 1 species. (d)
Odontognathus. 1 species
Engraulis. Several species. (e)
Butirinus. 1 species
Butirinus Banana. (f)
Erythrinus. 2 species. (g)

FAMILY VI.

Sub-brachians.

Flat-fishes.
Solea. 1 species. (h)

FAMILY VI.—*continued.*

Echeneis. 1 species. (i)

ORDER III.—APODAL-MALACOPTERYGIANS.

Anguilliforms.

Muraena. 1 species. (j)
Synbranchus. 1 species. (k)

ORDER IV.—LOPHOBRANCHII.

Syngnathus. 1 species.
Hippocampus. 1 species. (l)

ORDER V.—PLECTOGNATHI.

FAMILY I.

Gymnodontes.

Diodon. 1 species. (m)
Tetraodon. Several species. (n)

FAMILY II.

Sclerodermes.

Balistes. 1 species.
Ostracion. 1 species.

There are, besides the above-mentioned genera, several others which have not yet been ascertained; they must, however, be few. I will say nothing of the varied forms of our fishes, because it would be but to mutilate what has been written in professional works on the subject. Their habitat, utility, and the noxious properties of a few, are nevertheless matters of interest, and which require some elucidation.

As to habitat, I will separate the fresh-water from the salt-water fishes. The former are few in number; they are the pike

(a) Cascaradura, and a small fish, found in clear streams.
(b) Anne-Marie.
(c) Fresh-water sardines.
(d) Cailleu-tassart.
(e) Anchovies.
(f) Banana, or banane.
(g) Guabine and yarrao, two fresh-water fishes; the former very common in ponds, ravines, and rivers; the latter found only in clear rivulets.
(h) Sole.
(i) Pilote-fish.
(j) Conger-eel, or congre.
(k) Dog-headed eel, or anguille-tête-chien, abundant in ponds and ravines.
(l) Hippocamp.
(m) Mailed-fish, or poisson-armé.
(n) Chouf-chouf, poisonous.

(*Gerres*), the cutlass (*Trichiurus*), pœcilia, barbe (*Mystus*), cascaraduras (*Callichthys*), Anne-Marie (*Hypostomus*), sardines (*Hydrocyon*), guabine and yarrao (*Erythrinus*), dog-headed eel (*Synbranchus*). Besides the above, there are the common eel (*Anguilla*) and the *Coscorob*, very common in ponds and rivers, the cats (*Callichthys ?*) I have also been told that a *trout* is not scarce in our mountain streams; this fact I have not been able to ascertain.

Except the pœcilias, cats, together with a very small callichthys, all our fresh-water fishes are used as food. The river pike attains about eight inches, is met with in clear limpid water, and is generally caught with the hook. The cutlass fish—about twelve inches in length—inhabits muddy ravines, and is caught in nets, or, during the dry season, in isolated pools formed by the partial drying up of ravines; it is indifferent eating. The barbe is generally taken in nets, but also with the hook, it is a good fish; also the Anne-Marie, about eight inches long and scaly, very common in clear streams. The sardines are of small size, resembling the European sardine in form, but more compressed; the smaller sized is so familiar, as sometimes to attack the legs of persons standing in the water, or bathing; they are found in the clear and shallow streams of our valleys, and are generally caught by means of cast-nets; for which purpose a handful of manioc-meal is thrown into the water, and the sardines rush in shoals to the bait. The guabine is the largest of our fresh-water fishes, measuring from twelve to twenty inches in length; it is very voracious, and bites severely. As already stated, the guabine is found in rivers and deep ponds, particularly in the Bejucal, and other ponds in the neighbourhood of Caroni, and at the Cocal. It seems that the spawning season is about the month of July; they then creep into all the small rills of water which have a communication with the ravines and rivers, and are easily caught. They nibble at the hook, or are caught in *fish-pots;* the latter are long, conical net, or basket-works, made of roseau or bamboo, which are let down into the centre of the current of some stream, a regular dam being otherwise formed across, by which the fish are forced, in their passage down the stream, into the only opening afforded by the entrance of the pot; and having once entered, egress is impossible. The yarrao resembles the guabine in form, but is smaller in size. The dog-headed eel is caught in nets, into which

it entangles itself in pursuit of other fish; for the guabine is perhaps the only adversary it does not overcome; it attains from three to four feet. The bait placed in the nets is generally the manioc root: several intoxicating plants are also used to poison fish in pools and ponds. But, of all our fresh-water fish, the cascaradura is, by far, the most noted. Its length is from about six to ten inches; the body nearly prismatic, and covered with very hard horny scales—whence its name. The flesh is of an orange colour, and very delicate; it ought not to be confounded with the cat-fish, which resembles it very much, but the flesh of which is white and unsavoury. The cascaraduras are found in immense numbers in nearly all our large ponds, but particularly those in the Caroni savannah, and the marshy parts of Nariva, where even a small ravine bears the name of Cascaradura.

Our salt-water fishes are far more numerous, and of much greater importance, on account of their paramount utility, as articles of food: there are also among them several which are naturally or may accidentally become poisonous. Some of them are caught in the open sea, others near the shore, and at the mouths of rivers or creeks, and a few in rocky localities. The king-fish and Spanish mackerel are taken with tan-lines, either in the gulf, or outside, along the north coast; they are caught chiefly during boisterous weather. The anchovy (*Caranx*) is caught in the harbour; it is of the size of a sardine; an immense quantity is taken, every year, during the month of July; but they are migratory, and disappear in about three weeks. The pike (*Centropomus*), salmon (*Otolythus*), cod fish (*Elacates*) are also taken in the open sea. The lebranche, mullets; the balaon, gar-fish, crapaud, and rays are caught near the shore; the former, at the mouths of rivers and estuaries, or small creeks, which they ascend with the flow, and generally retire from with the ebb; drag-nets are then laid at the entrance, and the lebranche easily caught; the mullets are taken with the cast-net. The balaou and gar-fish are commonly caught at night by torch-light, or with the seine; carangues also, sometimes in enormous quantities, with the same; they are easily announced by their gambols at the surface of the water, and not unfrequently quite close in shore, so as to be then easily surrounded and dragged to land. It is not, perhaps, amiss to mention here a case, wherein about 3000 carangues were thus made prisoners and secured in a net: about 500 were sent to the markets the first day, and from

300 to 400 each subsequent day. One of our grupers (*Mesoprion*) haunts, in preference, the mouth of our larger rivers—the Caroni, the Guataro, &c.: it comes to a very large size, weighing above four hundred pounds; another species (*Clinus*)—the largest of all—is fond of rocky places where it hides in some hole; the third species (*Mesoprion*) is also found in such localities. The crapaud (*Batrachus*)—a very ugly-looking fish, particularly about the head, whence its name—is found imbedded in the mud-flats, or under large stones, where it is taken at low water. The red-mouths or crocros (*Haemulon*) are caught in weirs all along the coast; the snappers are hooked from the sandy banks about the bocas, as also the sardes—all excellent fish. The barracuta (*Sphyraena*) and conger-eel (*Muraena*) generally choose some haunt in the middle of rocky points, and there watch for their prey. The barracuta, when grown to a large size, is nearly as ferocious and voracious as the shark itself; it attains to seven and eight feet in length, and is abundant all along our shores. There is, on the eastern coast, a rocky point called "Barracuta Point," or "Pointe Becunes," on account of the large number of sphyraenas which are there found: they are reported to be more voracious than in any other place, and it is said there are but poor chances for any one falling overboard, in that locality; he is soon devoured by these shark-like fishes. The dorie, or lune, the parrot, and paradise fishes, together with a few others, are caught only by chance. The gros-yeux (*Cobitis Anableps*) is a small fish, about eight inches: they may be seen leaping in shoals above the surface of the water, in the shallows quite close to the shore, with quick successive jerks; they are then easily shot, and picked up when dead. The rays are plentiful, but seldom offered for sale; poor people, and the coolies especially, feed upon the young sharks. Besides the fishes above enumerated, there are three or four others of undetermined genera, viz., the *Paoua*, rather common, but not generally eaten—except by the poorer classes; the *Aileronde*, met with at Mayaro chiefly; it is about the size of a sole, but resembling the dorie in flesh, and is perhaps our most delicate fish; the *Zapatero* is also of good quality; the *Grande-écaille* is common but neglected. Another large fish—weighing upwards of 100 lbs. when of full size—is common in estuaries, on the northern and eastern coasts; it is called by the Spanish peons *Ragre-sapo*, or *toad-pagre*, and is excellent eating.

Some of our fishes deserve peculiar notice on account of their poisonous nature, or from their sometimes dangerous and even fatal encounter with man. I have already mentioned the barracuta; the sharks are too well known to deserve any lengthened notice. The fishes of the above description to be met in the gulf, and on the coasts, are the common shark (*Carcharias*), the pantoufflier (*Zygaena*), and the rays. The number of sharks in the gulf is surprising, particularly during the whaling season; and they, at times, occasion great loss to the fishers, as many as several thousands being said to prey on a dead whale, so that people are specially employed in killing them; this is done with a hatchet, or a sort of sharp spade, by which means the spine is divided at one single blow; large numbers are thus despatched. The armed, or sting-ray is often the cause of serious accidents. The barracuta and a small fish called *coulirou* are occasionally poisonous; but the only evil effects brought on, are vomiting and purging, accompanied with urticaria, and which easily yield to proper treatment. The scorpaena, or "Vingt-quatre-heures," is also considered a dangerous fish, and is much dreaded on account of the accidents it causes. Dr. Leotand was twice wounded by the scorpaena, and thus describes the symptoms he felt: "on the first occasion, when wounded in the toe, the pain was at first very severe locally, but soon retired to seize on the ankle-joint, then the knee, the hip, and the shoulder, in succession—the pain gradually dislodging from the parts primarily affected. From the shoulder, it extended to the corresponding side of the chest, at which period, the respiration became laboured, the pulmonary functions apparently ceased, and I fainted. A fever followed that lasted twelve hours, after which, health was restored, by the entire cessation of the pain, which disappeared, in like manner as on its access, though following an inverse course." On the next occasion, the scorpaena being of a very small size, the symptoms were similar in kind, but much less in intensity.

The accidents brought on by the tetraodon, or "Chouf-chouf," are of a different nature; the flesh itself is poisonous, as proved by the following facts: a large tetraodon having been boiled, in order to get the skeleton, the flesh was thrown away in the court-yard, and two cats, as many ducks and pigs, on accidentally eating of the same, died from its effects. Again, sometime in the year 1854, two young children died, within a few hours, after having

partaken of the liver of a tetraodon. It is rather remarkable that the voracious corbeau, as if warned by instinct of its poisonous nature, will not touch that fish.

The gar-fish, or orphie, though neither voracious nor poisonous, may be accidentally the cause of very serious sufferings. When disturbed, the orphies dart out of the water with great force, and should their course happen to be across or in the direction of a canoe, may come into contact with one of the persons therein. The snout of this fish, being long and serrated, pierces deeply into the part they hit; it then generally breaks, a bony fragment remaining in the flesh, or even in the plank of the boat: several accidents of this kind have been known, and in such cases, it became necessary to make a deep incision, in order to extract the fragment broken in the flesh.

Short and concise as is the above sketch, I yet hope that but few genera have been omitted of the great and remarkable class of vertebrated animals. It is true that but few species have been determined, an act of prudence, on account of the great difficulty in procuring objects of comparison, and of distinguishing the sexes and ages, among birds. How many errors have arisen from the latter cause! for, sometimes the female is more different from the male, and the young from the parent bird of the same species, than is genus from genus. From the above, also, the naturalist may form a pretty good opinion of our zoological riches, whilst some of the details into which I have entered may prove entertaining to the general reader.

One remark more; many of our animals (whether quadrupeds, birds, reptiles, or fishes) have no local English designations, and all the names are either Spanish or French, some Indian; so that I have been induced to use such terms as I know to prevail, either in the above languages, or in the English.

BOTANY.

OUTLINE OF THE FLORA OF TRINIDAD.

BY HERMAN CRÜGER.

TRINIDAD exhibits—if not on a grand scale, at least within striking and well defined limits—the distinctive characteristics of an intertropical American country. The variety of its soil and formations, the abundant supply of water with which it is blessed, give to the vegetable covering of this island the glowing colours, the richness and grandeur of forms which astonish and charm the admirer and lover of nature, and invite the thoughtful and scientfic mind to study and meditation. No wonder that the grateful Indian called this spot a paradise, swinging away his eventless life in the *chinchorro*, whilst below and around, the teeming soil spontaneously afforded him not only the necessaries, but even the luxuries of life.

> "Mollia securæ peragebant otia gentes;
> Ipsa quoque immunis, rastroque intacta, nec ullis
> Saucia vomeribus, per se dabat omnia, tellus."
>
> OVID i. 12.

But Ovid did not dream of South America; nor could he have foreseen its history, or he would, in his description of the other ages of the world, have depicted in vivid colours the civilising bloodhounds, and the taming whip of the slaveholder, as prominent features in the drama of a far-distant era—the AGE OF CHRISTIANITY!

"The character of a population depends greatly, though not solely, on the aspect of the vegetable world of a country," says Von Humboldt, in his "Views of Nature." Were I possessed of the pen or pencil of a Humboldt, I would essay to place in their mutual relation the luxuriance and grandeur of our forest-woods, with the careless, though amiable character of the Trinidadian; but this is

hardly within the scope of these pages. I may here, however, as well enregister my conviction that Trinidad—like other fertile tropical countries—will, from its own boundless luxuriance, never nourish a very industrious population.

The general character of our flora approaches that of Guiana; partaking, however, more or less, of that of the West India islands, in general, as will appear hereafter. The botanical traveller will therefore find the works of Aublet as useful and necessary to him in his researches as those of Swartz, Bonpland, and Kunth. This is, however, not to be understood in the sense that we have absolutely the same *species* of plants that grow in and characterise Guiana and the Antilles, for I have found this to be true in respect of *genera* only; but as genera, in most cases, exhibit the same vegetative characteristics in all, or most of their species, this is quite sufficient to demonstrate and explain the similarity of general aspect between our island, its continental neighbour, and the sister-islands.

With regard to species, I must say that of them I have not been able to determine a great number, and have, therefore, limited myself to giving in the annexed catalogue the names of genera only. Species can only be determined with absolute accuracy in large cities, where collections of plants, and libraries of reference, can supply all comparative informations. I could give only approximate determinations, which would prove of no real use; I have, therefore, preferred giving none.

The lists of species which I have seen of other islands, such as Barbadoes and St. Thomas, fully corroborate the truth of what I assert; for they are replete with errors of all sorts, merely because the writers thought it incumbent on them to particularise the species.

Forest-growths take the most predominant place in our vegetation; and that which at once strikes the European on reaching our shores, is the multiplied variety of forms and foliage they present. A large number of families contribute their quota to these formations; among which may be mentioned Palms and Lauraceæ, Rubiaceæ and Apocynaceæ, Verbenaceæ and Cordiaceæ, Myrsinaceæ and Sapotaceæ; as also Ebenaceæ, Myristicaceæ, and Anonaceæ, Capparidaceæ, Malvaceæ, and Sterculiaceæ; with Tiliaceæ, Ternströmiaceæ and Clusiaceæ, Meliaceæ and Cedrelaceæ, Malpighiaceæ and Sapindaceæ, Euphorbiaceæ and Bur-

seraceæ, Simarubaceæ and Diosmeæ, Melastomaceæ and Myrtaceæ, Chrysobalanaceæ, and, lastly, perhaps the richest family, Leguminosæ, or Fabaceæ, including Swartzieæ, and Mimoseæ. A glance at this list of families shows at once the difference which exists between these forests and those of higher latitudes, where, not only a few families, but also a few species, form the whole woodland vegetation. Nor ought it to be believed that only a paucity of the above families is met with in each forest, for the aggregate is almost everywhere of the same variety, whilst the species, and genera, perhaps, are different. In plains, with a fertile soil, for instance, certain forms predominate, without altogether excluding others; and the like arrangement occurs in other localities. A rich soil is generally indicated by the cabbage-palm (*Areca Oleracea*), and the carat (*Copernicia*); whereas, the timit (*Manicaria*) grows in light sandy soils, generally in company of a variety of trees of the myrtle tribe. In general, palms are indicative of the quality of the soil, and of the respective productions which can be raised on a given spot.

The northern chain of mountains, covered nearly everywhere with dense forests, is intersected at various angles by numbers of valleys presenting the most lovely character. Generally each valley is watered by a silvery stream, tumbling here and there over rocks and natural dams, ministering in a continuous rain to the strange-looking river-canes, dumb-canes, and balisiers, that voluptuously bend their heads to the drizzly shower which plays incessantly on their glistening leaves, off which the globules roll in a thousand pearls, as from the glossy plumage of the stately swan. Amid such Dryad-haunts as these, well might the poet realise the myth of the bathing nymph, and gloating Pan behind some broad-leafed fern concealed, with all the emotions of the Satyr-God!

One of these falls deserves particular notice—the Cascade of Maraccas—in the valley of that name. The high-road leads up the valley a few miles, over hills, and along the windings of the river, exhibiting the varying scenery of our mountain district, in the fairest style. There, on the river side, you may admire gigantic pepper trees, or the silvery leaves of the *Calathea*, the lofty bamboo, inclosing, perhaps, as in a leafy frame, a group of girls bathing beneath its many-stemmed shade, or the fragrant *Pothos*, the curious *Cyclanthes*, or frowning nettles, some of the latter from ten to twelve feet high. But how describe the num-

berless treasures which everywhere strike the eye of the wandering naturalist? Here, on the steep hill-side, the hut of the *Conuquero* emerges from a few fruit trees, such as the orange, lime, mangoe, and avocado; and, if he be a Spaniard, you may perceive him sitting on a bench before his door, near a rose or other flower-tree, meditating on better, bygone times, or saddened by the untimely death of a favourite game-cock.

To reach the *Chorro*, or cascade, you strike to the right into a "path" that brings you first to a cacao plantation, through a few rice or maize fields, and then you enter the shade of the virgin forest. Thousands of interesting objects now attract your attention: here, the wonderful *Norantia*, or the resplendent *Calycophyllum*, a *Tabernœmontana*, or a *Faramea*, filling the air afar off with a fragrance of their blossoms; there, a graceful *Heliconia* winking at you from out some dark ravine. At the margin of the latter let us take our seat, and, after having had a draught of the crystal element, I will tell you, during our rest, the names of the fairy forms that surround us; whilst a host of crickets and lizards chirp and whistle under concealment of the decaying leaves, making holyday the whole year round. That shrubbery above is composed of a species of *Bœhmeria, or Ardisia*, and that scarlet flower belongs to our native *Aphelandra*. In the rear, there are one or two *Philodendrons*—disagreeable guests; for their smell is bad enough, and they blister when imprudently touched. There also you may see a tree-fern, though a small one. Nearer to us, and low down, below our feet, that rich panicle of flowers belongs to a *Begonia;* and here, also, is an assemblage of ferns of the genera *Asplenium*, *Hymenophyllum* and *Trichomanes*, as well as of *Hepaticæ* and mosses. But, what are those yellow and purple flowers hanging above our heads?—They are *Bignonias* and *Mucunas*—creepers straying from afar, and having selected this spot, where they may, under the influence of the sun's beams, propagate their race. Those chain-like, fantastic, strange-looking lianes, resembling a family of boas, are *Bauhinias;* and beyond, through the opening, you see in the abandoned ground of some squatter's garden, the trumpet-tree (*Cecropia*), and the groo-groo, the characteristic plants of the *rastrajo.*

Now, let us proceed on our walk; we are near the cascade:—Here it is opposite you, a grand spectacle, indeed! From a

perpendicular wall of solid rock, of more than thirty-three feet, down rushes a stream of water splitting in the air and producing a constant shower, which renders this lovely spot singularly and deliciously cool. Nearly the whole extent of this natural wall is covered with plants, among which you can easily discern numbers of ferns and mosses, two species of *Pitcairnia*, with beautiful red flowers, some aroids, various nettles, and, here and there, a *Begonia*. How different such a spot would look in cold Europe! Below, in the midst of a never-failing drizzle, grow luxuriant ardisias, aroids, ferns, costas, heliconias, centropogons, hydrocotyles, cyperoids, and grasses of various genera—tradescantias and commelynas, billbergias, and, occasionally, a few small rubiaceæ and melastomaceæ.

From near this spot we may start to ascend the Tocuche, our highest mountain—it is about 3,100 feet. There I shall be afforded another opportunity of pointing out some natural beauties. Through dense forests—composed of some of our choicest timbers, such as the locust, poui, and cedar, with here and there a wild plum-tree or a sterculia, and in which the under-wood is made up of melastomaceæ (*Clidemia* and *Miconia*), rubiaceæ, peppers, grasses, and cyperaceæ—you reach, about 1,500 feet higher up, a region where the aspect of the woods begins to change. Winds must blow here with great violence, at times, since the ground is strewed with small branches; humidity also is greater, as indicated by the number of mosses and ferns that clothe the trunks of the trees. Here is a kind of bamboo (*Chusquea*), a climbing plant which is not to be met with in the lower parts, and also very rarely on other mountains. The growth and size of the trees decrease as we gradually ascend higher and higher until we reach the summit, where they become stunted and scarce, being replaced by a small palm (*Geonoma*). Here occurs a new and interesting vegetation which exhibits some of the characters of the mountain districts of South America, as described by Humboldt, and others; here, also, we meet with one or two tree-ferns of a goodly size, a *Thibaudia*, and the beautiful *Utricularia Montana*, growing on trees like other parasites. Nearly all the stems are covered with jungermannias and mosses, ferns and small orchids; some spots are covered, exclusive of all other plants, with another bambusaceous grass, viz., the *Platonia Elata*.

As has already been remarked, the woods of the plains do not differ very materially from those of the lower mountains. There are only two species of our forest trees that are gregarious in growth, and that may be termed *social*—the *Mora*, which covers extensive tracts of land in different parts of the island; and the mangrove (*Rhizophora*), which grows in the saline swamps that border the sea; the rhizophora is, however, generally accompanied by the other species of mangrove, viz., the *Avicennia* and the *Conocarpus*. The conocarpus appears to be a salt-plant, for I also found it near the mud-volcanoes, together with a few other shrubs, and amarantaceous plants which thrive near the sea-shore.

Next to our forests, our so-called "natural savannahs" deserve notice. Four different classes may be distinguished, all more or less denuded of trees and shrubs. The first class is the periodically inundated savannahs of the coast, immediately in the rear of the mangrove forests of Caroni and Chaguanas. Coarse grasses and cyperoids, together with a slight sprinkling of convolvuli, hibisci, sesbaniæ, echites, and a few others, characterise these tracts; as they stretch towards the interior and the high woods, these plants become mixed up with grasses of a finer kind—an *Ambrosia*, *Malachra*, *Mimosa*, &c. Next to the above comes the savannah on the eastern side of the island, at a rather considerable distance from the sea. Here again the principal growth is of grasses and cyperoids, but of a different kind, though those of the former are not altogether excluded; but the finer sorts are more prevalent here, and the whole district bears a different appearance, particularly as this savannah is enlivened by the mauritia palm. There exists, in its vicinity, an extensive swamp covered with many trees, among which I have remarked the *Virola* in great numbers, together with the *Moronobea*, of Aublet. Here also is to be found a splendid *Crinum*, from eight to ten feet high when in bloom, the umbel of flowers measuring more than a foot in diameter.

The savannah of Aripo differs from the above-mentioned; it is, in the interior, subject to periodical but partial inundations, and covered with grasses and herbs altogether different, and, to the naturalist, of a much higher interest than the former specimens. The soil is a kind of sand covered with vegetable *detritus*. It is impossible to describe the feelings of the botanist when

arriving at a field like this, so much unlike anything he has ever before seen. Here are full-blowing large orchids, with red, white, and yellow flowers; and, among the grasses, smaller ones of great variety, and as great scientific interest; melastomaceous plants of various genera (*Arthrostemma* and *Osbeckia*)—utricularias, droseras, rare and various grasses, and cyperoids of small sizes and fine kinds, with a species of *Cassytha;* in the water, *Ceratophyllum* and bog-mosses. Such a variety of forms and colours is nowhere else to be seen, or met with, in the island. This scenery is enlivened by groves of moriche and cabbage palms growing, here and there, in great luxuriance in the more inundated spots.

The transition from this kind of savannah to the dry savannah of the plain, or plateau, is exemplified in those known by the name of O'Mara and Piarco. They do not exhibit that variety of plants which adorn those already mentioned, but they still retain the same striking features, and the soil is undoubtedly of the same composition. The grasses are higher and coarser, and the savannahs themselves interspersed with two small trees—the *Chaparro* (*Curatella*) and a *Bunchosia;* here and there also a shrub of *Miconia*, or *Vismia*, with byttnerias, ruellias, and osbeckias. In the water-courses are to be found two plants, viz., an *Eriocaulon* and *Tonina*, which are, perhaps, to be found also at Aripo, together with the following: *Xyris*, *Mayaca*, *Hydrolea*, and, bordering on the high wood, *Rapatea*.

Somewhat resembling the above, but more destitute of similar shrubs, are the savannahs of Icacos, and those of Savanetta and Couva. The driest, however, as also the least interesting of our "natural savannahs," is that situated near Arima. It is overgrown with chaparros, under whose scanty shade grow coarse scrophulariaceæ, principally *Beyrichia*, with a smaller quota of grasses and cyperoids; and, in moist spots, an abundance of *Heliconia Psittacorum*.

I would not, without much hesitation, class the savannahs on the mountains—from St. Joseph to Arima—among *natural* savannahs. They may possibly owe their origin to the destruction of forests by fire, in parts where the layer of soil was too thin to nourish a fresh generation of trees. They offer little interest to the botanist, and yet their exploration is rather difficult, the high rank grass they produce—*Pennisetum*, *Setaria*, *Andropogon*, &c.

—being mixed up with cutting sclerias, and others. However, whenever these savannahs have been cleared by burning, a more interesting vegetation succeeds; and I have found there, among other plants, several orchids, *Buchnera*, &c.

After thus endeavouring to present a picture of our forests and savannahs, as far as their botanical character is concerned, I will now proceed to give an account of the rivers and swamps.

Rivers with a rapid stream are of little interest to the botanist, and we have already noticed what plants are met with on their banks, when speaking of ravines and waterfalls. As to plants vegetating altogether in water, there are hardly any beyond a few algæ adhering to the roots of trees: those of a larger size would be carried away by freshets during the wet season. But those watercourses, which are rather mere estuaries, since their waters become salt during the dry season, deserve peculiar notice. As soon as the wet season sets in, they are seen covered with a thick carpetting of nymphæas, utricularias, pontederias, and azollas. This vegetation is nearly identical with that of our swamps or lagoons, for instance, those of Erin and Quemada; they exhibit, however, a few other plants which are not found at the above places, viz., *Salvinia*, *Limnobium*, *Ceratophyllum*, besides *Lemna* and *Pistia*. The half salt, or brackish swamps nourish, principally, large rushes, typhas, banisterias, and *Echites Biflora*, *Acrostichum Aureum*, and nearer to the sea, *Crenea* and *Antherylium*. In small water-pools or rivulets, in the plains of the interior districts, may be found *Ammania* and *Jussieua*, *Spilanthes*, several species of *Nerpestes*, *Mayaca*, and *Conobea*.

On sandy beaches, we observe, before all, the beautiful *Ipomea Pes Capræ* and another species with white flowers, a *Pancratium* and a *Remirea*, also several grasses of the following genera:—*Paspalum*, *Cenchrus*, *Stenotaphrum*, Cyperoids, and others. Further inward we meet with a dense shrubbery of *Chrysobalanus*, *Conocarpus*, *Paritium*, and *Bactris;* and beyond these, we may, perhaps, observe fields of *Gynerium Saccharoides*, or the white roseau.

The vegetation of the pitch-lake has its peculiarities, although no particular species grows there within my knowledge. In the middle of this curious spot there is, of course, no vegetation whatever, since the pitch is there in a state of ebullition; farther off this centre, and in the water of the many crevices which

intersect the lake in every direction, the first traces of vegetation become perceivable—such as a few confervæ and a *Chara;* at a still greater circumference, the pitch, having been long exposed to the agencies of sun and rain, has become disaggregated, and in this kind of soil are found a few lichens, mosses, grasses, and cyperoids. In other places, where this layer is looser and thicker, we find the following:—a *Clusia*, *Chrysobalanus Icacos*, *Anona Palustris*, *Xyris*, bromeliaceæ, and ferns. The lake itself is bounded on one side by a kind of savannah—the sterility of this spot being exemplified by an undue proportion of sclerias, ferns, and melastomaceæ (*Osbeckia* and *Spennera*) together with bromelias dotting everywhere the rank grasses.

The islets of the Bocas are overgrown with plants which are, as it were, peculiar to them, and on that account they deserve a distinct notice. These islets are, for the most part, drier than the mainland of Trinidad, which circumstance is, undoubtedly, the great modifying cause inducing a botanical resemblance between the former and the Windward islands; whereas the flora of Guiana preponderates on the mainland. Any person landing on one of these islets must be struck at once with the difference: large bromelias, cactuses, and agaves, everywhere shoot up, with their characteristic features; and the thickets of brushwood are composed of helicteres, crotons, capparis, and mimosas, under whose shade thrives a luxuriant vegetation of evolvulus, ruellias, various commelynaceæ, amarantaceæ and compositæ, with only a very few grasses. One ridge is wholly occupied by the beautiful *Coutarea Speciosa*, one of the bark-trees of the West Indies.

The primæval forests of these small islands were probably destroyed at an early period, so that we cannot now affirm what they then were; but we must conjecture they were different from those of the mainland. The few plants which are now standing are of trifling interest to the botanist: besides, they do not display that marvellous vigour exhibited by the general vegetation of Trinidad. Almost constantly buffeted by strong blighting winds, they exhibit a ruffled appearance, just as the man harrowed by habitual passions, bears a peculiar cast of features. These trees belong to the genera bursera, gomphia, sabinea, bombax, and others.

Having thus, and as far as my abilities would allow, sketched the general features of our vegetable world in its natural state, I

must now offer a few remarks on the appearance it takes under the fostering care of man, and the modifying influence of cultivation. The plants which are grown directly or indirectly, for the purpose of ministering to the sustenance and convenience of man, have been fully noticed in the work to which the present paper forms an appendix: they are therefore not to be considered here. But a few plants formerly introduced into Trinidad have been since allowed to degenerate into a wild state; of these I shall first speak. I must premise, however, that my data are not sufficiently authentic, and, of course, this part of my sketch, at least in a few instances, admits of doubts.

The first family which claims our attention is that of grasses—either as having produced a few troublesome intruders, or as having supplied useful individuals. The Guinea-grass (*Panicum Jumentorum*), though not, I believe, indigenous to Trinidad, is now found wild in some localities. A panicum grows at the Bocas islands, *called* Guinea-grass; it is very nearly allied to the former, but I am dubious as to their complete identity. Next to this comes the Para-grass, also a panicum, introduced here at some trouble, and which soon became an intolerable nuisance. I must also mention the Bahama-grass (*Cynodon Linearis*); this, however, was not perhaps intentionally introduced or propagated in the island. The same observation applies to the coco-nut tree.

A few amarantaceæ—for instance, *Amaranthus Spinosus*—were probably of foreign extraction, and accidentally imported. *Sesamum Orientale* grows wild here and there, but only in single specimens.

Among crassulaceæ, the *Bryophyllum Calycinum* deserves to be mentioned.

A few cucurbitaceæ were also brought in, no doubt, originally, as an article of sustenance; but from their immense spread they may now be considered almost as indifferent weeds: such are the common pumpkin and the mexicain (*Momordica Balsamina*).

Several species of opuntias and cereus are to be found everywhere: these certainly are not indigenous.

Two species of clerodendron are regular pests all round Port-of-Spain.

If, now, we turn to those plants which grow wild, although not indigenous, being of fortuitous introduction, our knowledge becomes more restricted still.

An European poa grows wild in the streets and courtyards of Port-of-Spain, and I am inclined to believe that scourge of the gardener and planter—the nut-grass (*Cyperus Hydra*)—to be a foreigner.

A number of so called cosmopolitan plants—such as the *Emilia Sonchifolia*, *Eclipta Erecta*, *Erigeron Canadense*, *Datura Stramonium*—are, in all probability, accidentally imported species.

Another class of plants calls for a few remarks in this place—I mean those which follow or accompany man on his path of settlement and in his cultivations, which cover the walls of neglected or abandoned dwellings, and are, for the most part, sure symptoms of his former residence in their localities. They are hardly to be met with anywhere else; so much so, that we can judge with certainty, by the mere presence of certain plants, that a plantation must have existed in such or such a place; in fact, that we are in a RASTRAJO. Now where, I would ask, were the germs of these plants previous to the eradication or decay of the original vegetation?

The streets of Port-of-Spain are overgrown by a number of plants of the genera cynodon, eleusine, cyperus, alternanthera, and euphorbia; these appear to become the more vigorous the more they are trodden upon. Others could not resist or survive this treatment, and, therefore, retire into vacant courtyards and abandoned lots—as, for instance, the peperomia, several urticas, and amaranthi, the *Elephanthopus Spicatus*, *Eclipta Erecta*, *Parthenium Hysterophorus*, *Synedrella Nodiflora*, a *Hedyotis*, *Leonurus Sibiricus*, solanum, datura, and physalis, *Scoparia Dulcis*, *Capraria Biflora*, a portulacca, a sida, and others less common. On crumbling roofs and dilapidated mason-work we may remark a barbula, *Gymnogramma Calomelanos*, *Dactyloctenium Ægyptiacum*, *Poa Ciliaris*, *Tradescantia Discolor*, urtica, and parietaria, *Boerhaavia Paniculata* (Rich.), eupatorium, and sonchus, barreria, and verbena, &c. Two vines, a cissus and the *Luffa Operculata*, cover nearly every old wall.

On road-sides, we meet with certain of the same plants we have just now enumerated, mixed up with a variety of species belonging to different families. Where the road traverses cultivated land, the following genera prevail:—Setaria, cenchrus, sporobolus, chloris, saccharum, andropogon, cyperus, and fuirena; in moist situations, spermacoce, and barreria, spigelia, asclepias,

schultesia, and sabiea, hyptis and salvia, rivinia, sida, urena, euphorbia, and croton, osbeckia, crotalaria, æschynomene, and hedysarum: these grow in company with shrubs of the genera hamelia, randia, rauwolfia, and lantana; also with lianes and vines, such as convolvulaceæ, bignoniaceæ, echites, stigmophyllum, paullinia and leguminoseæ. A somewhat different assemblage prevails where the path lies through a forest: there we find ferns of the genera adiantum, lindsæa, trichomanes, lycopodium, and selaginella; xiphidium, piper, böhmeria, various rubiaceæ, acanthaceæ, and bignoniaceæ; petiveria, triumfetta, melastomaceæ, and others.

The sides of ditches are, generally, clothed with the following:—Bartramia, jungermanniaceæ, hemionitis, asplenium and anemia, lycopodium and selaginella; various grasses and cyperoids; dorstenia, leria, cephaelis, hedysarum and mimosa.

Cultivated grounds have also their peculiar inhabitants. Polypodium, aspidium, lindsæa and adiantum, large setarias, commelynaceæ, pupalia, centropogon, hedysarum and aroideæ delight in cacao plantations; paspalum and panicum, cyperus and mariscus, conyza and ageratum, eryngium, indigofera, hedysarum and desmodium, herpestes and drymaria, and, but too frequently, the alectra, or cane-killer, in sugar plantations: the alectra, however, is not limited to cane-fields. In provision-grounds and recently burnt land, the following genera occur:—Poa, panicum, cyperus, erigeron, porophyllum, emilia, spilanthus, neurolæna, erechtites, solanum, mitreola, priva, oxalis, wedelia, cenchrus, *Scoparia Dulcis*, *Eryngium Fœtidum*, microtea and croton.

In abandoned lands will grow, at first, the foregoing weeds, and soon after, the following shrubs:—Lantana, varronia, psidium, ochroma, cecropia, and abroma, and, among palms, the groo-groo, *acrocomia*, and astrocaryum.

The vegetation of our pasture-lands is composed, in addition to grasses and cyperoids, of hypoxis, cipura, araceæ, elephanthopus, spermacoce, spigelia, echites, *Asclepias Curassavica*, marsypianthes, solanum, achetaria, sauvagesia, osbeckia, hedysarum, and mimosa.

It now remains for me to enter upon the enumeration of all the genera I have had an opportunity of observing in the island—a list that will interest the general reader much less than the scientific man, or the student seeking information. Before, however, commencing this task, I will give a general sketch of what

Humboldt calls "Forms of Vegetation," and how far each of these is represented in Trinidad.

Palms.—These are largely represented here, and among them we have the small geonoma, from three to four feet in height, as well as the stately *Oreodoxa*, or *Areca Oleracea*, with its lofty crest towering above our forest giants, and the climbing desmoncus winding upwards and downwards among its neighbours, sometimes to an enormous length. The pinnated-leaved genera outnumber, by far, those with fan-shaped leaves, of which there are only three species, to my knowledge. Our palms are seen to the best advantage in the savannahs at Aripo and the Cocal, where they form groups at shorter or longer intervals.

Bananas.—This form embraces the plantain and banana, or Indian fig, as well as the balisiers, the ginger and arrow-root plants. We have a rich supply of these, and no doubt, in conjunction with the palms, they impart to our landscape some of its choicest features. Every person of taste must have been struck with the exquisite beauty of some of our glens and river hollows, in the composition of whose scenery the balisiers contribute an important item.

Malvaceæ.—Humboldt finds the type of this form in those gigantic trees known here under the common name of silk-cottons. The latter we have in the island, as also a few others, viz., the wild chesnut (*Carolinea*) and the cork-wood (*Ochroma*). The first of these trees, the bombax, presents this striking peculiarity, that, besides its enormous proportions, it affords a hospitable home to a multitude of parasites from numerous families—such as ferns, wild pines, orchids, and cacti, besides a host of mosses and liverworts.

Mimoseæ.—The elegance of this form, both as regards branches and foliage, cannot fail to attract the attention of an observer. Of these, the tamarind tree is the most common example, but certainly not the most beautiful. This is to be found in the ingas and the genera deriving from them.

Heaths.—We have nothing like this form.

Cactus.—Excepting on the Bocas islands, these have but few representatives here, on account of the great fertility of the soil and the abundant atmospheric moisture.

Orchids.—It is well known that we possess many individuals of this strange family, though they are becoming more rare in the

vicinity of cultivations—at least their finer kinds. But in the forests they occur at every step, displaying their graceful forms and gorgeous hues.

Casuarinas.—There are a few of these—cultivated.

Pines.—We have no pines, except a few cultivated specimens, stunted and miserable-looking, as if longing for "sweet home." There is a ridiculous exhibition of them, in front of Trinity church, Port-of-Spain.

Pothos and Aroids.—We are very rich in this form, there being all imaginable varieties of them. From the numerous species of anthurium, growing like parasites on trees, various species of caladium and others; from the widely known and useful mamure (*Carludovica*) which furnishes the settlers with natural twine and rope, down to the dumb-cane (*Dieffenbachia*) and smaller aroids growing on river-sides, together with the curious cyclanthus—all are equally interesting and attractive. Tanias and seguines belong to this form. An interesting plant of this class is the *Montrichardia*, the largest of all, covering our half-salt, brackish swamps for miles: its seeds supply a sort of chesnut, which certainly no one would have expected.

Lianes.—We have already had occasion to observe how rich our forests are in this form—the truly distinctive feature of the tropical woods. A great number of families supply examples—the most prominent being bignonias, malpighiaceæ, bauhinias and dilleniaceæ: they assume all possible forms, sometimes being twisted together like ropes, or flattened like tapes; sometimes they creep up the highest trees, thence to hang down in elegant festoons, or coil around the stems, like giant serpents, attempting to stifle their supporters. A few run along the ground, their hooks and thorns catching or tearing the incautious hunter, who, in return, has honoured them with the appellation of *Boyaux-Diable* (devil's-guts) and *Crocs-chien* (dog's-teeth). Others hang a few feet only from the ground, in readiness to cut and tear the clothes of the threader of their mazes. A great many, on the other hand, supply, in case of need, as I have more than once experienced during my rambles in our forests, an abundance of fresh water of a deliciously cool and refreshing quality. A large proportion of our lianes bear the finest flowers; I need only mention the bignonias, dolichos, norantea, the passion-flowers and the securidaca.

Aloes.—There is but one plant here as a representative of this form—the agave—which grows principally at the Bocas islands, in great numbers and with much vigour.

Grasses—mainly arborescent.—Although the bamboo, which chiefly represents this form in our island, is a foreigner, yet it has spread all over the colony to such an extent, that it becomes, in many places, an indispensable adjunct to our island landscape. We possess, however, an indigenous bamboo, which may be seen at Caroni, Chaguanas, and Couva, and also the elegant chusquea, which we have noticed on the *Tocuche*.

Ferns.—We have a few tree-ferns, as I have already mentioned; but as they grow on the top of our highest *mornes*, they are not easily reached. Notwithstanding, the form of ferns has here a large number of representatives, and in many localities they add no inconsiderable charm to the refreshing scenery of our valleys and ravines.

Lilies.—Although we have a number of very elegant pancratiums, crinums, and amaryllides, yet a South American island is not exactly the spot in which a botanist would seek or expect a rich assemblage of these plants. The only part where the importance of this form is exhibited to any advantage, is the swamp near the savannah at the Cocal.

Willows.—Not represented here.

Myrtles.—In dry and somewhat sterile spots, we generally meet with a peculiar vegetation, characterised by not very large trees, with slender branches, small leaves of a dark shining green, and a roughness of the stem, owing to the shedding of their bark. These are myrtles. But the myrtle form does not possess here that importance it assumes in higher latitudes, and in New Holland.

Melastomas.—If we are rather poor in myrtles, this deficiency is compensated by the melastomaceæ, a form not very remote from the preceding. The plants belonging to it are, generally, shrubs or small trees, with dark green leaves, distinguishable by very prominent longitudinal ribs. The flowers commonly form large rich clusters, and are frequently very fragrant. They are closely allied to the next class.

Laurels.—This closes the list of forms, as enumerated by Von Humboldt. He adds to this form, that tribe of plants to which belong the mammee and the *Matapalo* of our forests—

distinguishable by a very fine foliage and large flowers, generally fragrant. We are, therefore, induced to aggregate to them the moronobea—one of the finest ornaments of our woods—the different species of clusia, also, the rose-apple tree, though an exotic.

There is one form of trees which Von Humboldt has omitted, and which cannot fail to attract the notice of the least attentive, as very peculiar and highly characteristic. I would call it the Papaw form.

PAPAYAS.—A naked trunk, or branches, crowned by a cluster of large leaves with long stalks, will characterise this form. Besides the type-form—the papaw—we must notice the trumpet-tree (*Cecropia Peltata*) and a species of panax, common in cultivated grounds.

I have now nearly arrived at the conclusion of my task, since it remains for me but to give a list of all the genera I have, up to the present time, had opportunities of observing. However long and learned this list may appear to the general reader, yet its perusal will afford but little satisfaction to the scientific man. It is therefore natural that, for the information of the latter, I should prefix this bare classification by a few words of explanation. Though I have been engaged now more than fourteen years in researches connected with the vegetable world of Trinidad, I have rather given preference to the study of morphology, anatomy, and physiology, contributing the result of my investigations therein, from time to time, to the scientific papers of Germany. To the lower families of plants, in particular, I have not been able to devote that time and attention they deserve; and, as a consequence, it will appear that they have been neglected. I have also already explained the reason for my having refrained from determining the numerous species of plants which compose the flora of Trinidad.

A CATALOGUE OF THE DIFFERENT FAMILIES AND GENERA OF PLANTS EXISTING IN TRINIDAD, AS HAVING PASSED UNDER MY OWN OBSERVATION.

Algæ—
- Oscillaria.
- Zygnema.
- Conferva.
- Vancheria.
- Ulva.
- Sphærococcus.
- Zonaria.

Characeæ—
- Chara . . . . . Ag.

Lichens—
- Cænogonium.
- Parmelia.

Fungi—
- Uredo . . . . . Pers.
- Torula . . . . . Pers.
- Phragmidium . . . . Link.
- Didymosporium . . . Nees.
- Coryneum . . . . . Fries.
- Tubercularia . . . . Tode.
- Psilonia . . . . . Fries.
- Fusisporium . . . . id.
- Bacridium . . . . . Kunz.
- Oidium . . . . . Link.
- Sporotrichum . . . . id.
- Botrytis . . . . . Mich.
- Aspergillus . . . . id.
- Eurotium . . . . . Link.
- Pilobolus . . . . . Tode.
- Isaria . . . . . Pers.
- Erysibe . . . . . Reb.
- Stemonitis . . . . . Gled.
- Physarum . . . . . Pers.
- Geaster . . . . . Mich.
- Nidularia . . . . . Fries.
- Clathrus . . . . . Mich.
- Phallus . . . . . id.
- Hysterium . . . . . Fries.
- Sphæria . . . . . Hall.
- Hypoxilon . . . . . Bull.
- Tremella . . . . . Dill.
- Peziza . . . . . id.
- Helvella . . . . . L.
- Hydnum . . . . . L.

Fungi (continued)—
- Polyporus . . . . . Fries.
- Agaricus (a) . . . . L.

Hepaticæ—
- Riccia . . . . . Miche.
- Anthoceros . . . . Mich.
- Marchantia . . . . March.
- Jungermannia . . . Dill.

Musci—
- Sphagnum . . . . . Dill.
- Fissidens . . . . . Hedw.
- Bryum . . . . . Dill.
- Bartramia . . . . . Hedw.
- Calymperes . . . . Sw.
- Syrrhopodon . . . . Schu.
- Barbula . . . . . Hedw.
- Macromitrium . . . Br.
- Dicranum . . . . . Hedw.
- Hypopterygium . . . Brid.
- Mniadelphus . . . . C.Mül.
- Neckera . . . . . Hedw.
- Polytrichum . . . . P.Bea.
- Hookeria . . . . . Sw.
- Hypnum . . . . . Dill.

Filices—
- Gleichenia . . . . . Smith.
- Mertensia . . . . . Willd.
- Cyathea . . . . . Presl.
- Cnemidaria . . . . Presl.
- Alsophila . . . . . Br.
- Lastrea . . . . . Pres.
- Oleanara (b) . . . . Cavan.
- Nephrolepis . . . . Schott.
- Palystichum . . . . id.
- Aspidium . . . . . id.
- Blechnum . . . . . L.
- Asplenium . . . . . L.
- Diplazium . . . . . Sw.
- Davallia . . . . . Smith.
- Lindsæa . . . . . Dryan.
- Dicksonia . . . . . Pr.
- Lomaria . . . . . Willd.
- Pteris . . . . . L.
- Allosorus . . . . . Bernh.

(a) Our edible mushroom.

(b) Hart's tongue.

Filices (continued)—
- Adiantum (a) . . . L.
- Cheilanthes . . . . Sw.
- Vittaria . . . . . Smith.
- Polypodium . . . . L.
- Marginaria . . . . Bory.
- Campyloneurum . . . Pr.
- Pleopeltis . . . . . Hum.
- Phymatodes . . . . Pr.
- Monogramma . . . . Sch.
- Hemionitis . . . . L.
- Pleurogramma . . . Bl.
- Grammitis . . . . . Sw.
- Meniscium . . . . Schreb.
- Gymnogramma . . . Desi.
- Polybotria . . . . . Hum.
- Olfersia . . . . . Raddi.
- Acrostichum . . . . L.
- Parkeria . . . . . Hook.
- Hymenophyllum . . . Sw.
- Trichomanes . . . . L.
- Aneimia . . . . . Sw.
- Schizæa . . . . . Sw.
- Lygodium . . . . . Sw.
- Ophioglossum . . . . L.

Hydropterides—
- Azolla . . . . . Lam.
- Salvinia . . . . . Mich.

Lycopodiaceæ—
- Lycopodium . . . . L.
- Selaginella . . . . . Pal.

Balanophoraceæ—
- Helosis . . . . . Rich.

Graminaceæ—
- Leersia . . . . . Sol.
- Oryza . . . . . L.
- Pharus . . . . . P. Br.
- Zea (b) . . . . . L.
- Coix (c) . . . . . L.
- Paspalum (d) . . . . L.
- Olyra . . . . . L.
- Eriochloa . . . . . Kunth.
- Panicum (e) . . . . L.
- Stenotaphrum . . . Trin.
- Oplismenus . . . . Pal.
- Pennisetum . . . . Rich.
- Cenchrus . . . . . L.
- Sporobolus . . . . R. B.
- Gynerium (f) . . . H.B.K
- Cynodon (g) . . . . Rich.

Graminaceæ (continued)—
- Dactyloctenium . . . Willd.
- Chloris . . . . . Sw.
- Leptochloa . . . . . Pal.
- Eleusine (h) . . . . Gaert.
- Poa . . . . . L.
- Orthoclada . . . . Pal.
- Streptogyna . . . . id.
- Chusquea (i) . . . . Kunth.
- Nastus (j) . . . . Jus.
- Tripsacum . . . . . L.
- Eriochrysis . . . . Pal.
- Saccharum (k) . . . L.
- Anthistiria . . . . . L.
- Andropogon (l) . . . L.
- Ischæmum . . . . L.

Cyperaceæ—
- Scleria (m) . . . . Berg.
- Rhynchospora . . . Vahl.
- Dichromena . . . . Rich.
- Remirea . . . . . Aubl.
- Diplasia . . . . . Rich.
- Fuirena . . . . . Rottb.
- Fimbristylis . . . . Vahl.
- Isolepis . . . . . R. B.
- Cyperus (n) . . . . L.

Eriocaulonaceæ—
- Eriocaulon . . . . . Gron.
- Tonina . . . . . Aubl.

Xyridaceæ—
- Xyris . . . . . L.
- Mayaca . . . . . Aubl.

Commelynaceæ—
- Commelyna (o) . . . Dill.
- Aneilema . . . . . R. B.
- Callisia . . . . . Löeffl.
- Tradescantia . . . . L.
- Dichorisandra . . . Mich.

Juncaceæ—
- Rapatea . . . . . Aubl.

Pontederiaceæ—
- Pontederia . . . . L.

Smilaceæ—
- Smilax (p) . . . . . Tourn.

Dioscoreaceæ—
- Rajania . . . . . L.
- Dioscorea (q) . . . Plum.

Hydrocharidaceæ—
- Limnobium . . . . Rich.

(a) Maiden-hair.
(b) Maize.
(c) Job's tears.
(d) Lancet-grass.
(e) Guinea-grass.
(f) White roseau.
(g) Bahama-grass.
(h) Pied-poule.
(i) Vine bamboo.
(j) Common bamboo.
(k) Sugar-cane.
(l) Lemon-grass.
(m) Sword-grass.
(n) Nut-grass.
(o) Herbe-grasse
(p) Sarsaparilla.
(q) Yam.

Burmanniaceæ—
Dictyostega . . . . Miers.
Iridaceæ
Cipura . . . . . Aubl.
Hæmodoraceæ—
Xyphidium . . . .
Hypoxidaceæ—
Hypoxis . . . . . L.
Amaryllidaceæ—
Amaryllis (a) . . . L.
Crinum . . . . . L.
Pancratium . . . . L.
Alstrœmeria . . . . L.
Agave (b) . . . . . L.
Bromeliaceæ—
Ananassa (c) . . . . Lindl.
Bromelia (d) . . . . L.
Bilbergia (e) . . . . Thun.
Pitcairnia (e) . . . Herit.
Tillandsia (e) . . . L.
Gusmannia . . . . R. & P.
Orchidaceæ—
Pleurothallis . . . . R. B.
Specklinia . . . . . Lindl.
Lepanthes . . . . . Sw.
Stelis . . . . . id.
Liparis . . . . . Rich.
Bolbophyllum . . . Tho.
Polystachya . . . . Hook.
Epidendrum . . . . L.
Isochilus . . . . . R. B.
Cattleya . . . . . Lindl.
Nanodes . . . . . id.
Trizeuxis . . . . . id.
Ornithocephalus . . . Hook.
Maxillaria . . . . . R. & P.
Bifrenaria . . . . . Lindl.
Catasetum . . . . . Rich.
Stanhopea . . . . . Hook.
Gongora . . . . . R. & P.
Coryanthes (f) . . . Hook.
Peristera . . . . . id.
Cymbidium . . . . . Sw.
Cyrtopodium . . . . R. B.
Cyrtoptera . . . . . Lindl.
Notylia . . . . . id.
Ionopsis . . . . . H.B.K.
Rodriguezia . . . . R. & P.
Bourlingtonia . . . . Lindl.

Orchidaceæ (continued)—
Macradenia . . . . R. B.
Cryptarrhena . . . . id.
Oncidium (g) . . . Sw.
Fernandezia . . . . R. & P.
Dichæa . . . . . Lindl.
Brassia . . . . . R. B.
Angrœcum . . . . Thou.
Habenaria . . . . Willd.
Spiranthes . . . . . Rich.
Pelexia . . . . . Poit.
Prescottia . . . . . Lindl.
Cleistes . . . . . Rich.
Epistephium . . . . H.B.K
Vanilla . . . . . Sw.
Schomburgkia . . . Lindl.
Batemania . . . . . id.
Paphinia . . . . . id.
Zingiberaceæ—
Alpinia (h) . . . . . L.
Costus (i) . . . . . L.
Cannaceæ—
Thalia . . . . . L.
Maranta (j) . . . . Plum.
Calathea (k) . . . . Meyer.
Canna (l) . . . . . L.
Musaceæ—
Heliconia (m) . . . L.
Naiadaceæ—
Zostera . . . . . L.
Lemnaceæ—
Lemna . . . . . L.
Araceæ—
Pistia . . . . . L.
Caladium (n) . . . . Vent.
Philodendron (o) . . Schott.
Dieffenbachia (p) . . id.
Monstera (q) . . . . Adans.
Montrichardia . . . Crüger
Massowia . . . . . Koch.
Anthurium . . . . Schott.
Typhaceæ—
Typha . . . . . Tourn.
Pandanaceæ—
Carludovica (r) . . . R. & P.
Cyclanthus . . . . Poit.
Palmaceæ—
Oreodoxa (s) . . . . Willd.
Mauritia (t) . . . . L. son.

(a) Lily.
(b) Langue-bœuf.
(c) Pine-apple.
(d) Caratas.
(e) Wild pine-apple.
(f) Macaque.
(g) Butterfly and flies.
(h) Mardi-gras.
(i) Canne-de-rivière.
(j) Arrow-root.
(k) Aruma.
(l) Tuluma.
(m) Balizier.
(n) Tanias.
(o) Seguine.
(p) Seguine-diable.
(q) Ceriman.
(r) Mamure.
(s) Mountain cabbage.
(t) Moriche.

Palmaceæ (continued)—
Geonoma . . . . . Willd.
Manicaria (a) . . . Gaert.
Copernicia (b) . . . Mart.
Thrinax . . . . . L. son.
Desmoncus (c) . . . Mart.
Bactris (d) . . . . Jacq.
Guilielma (e) . . . Mart.
Acrocomia (f) . . . id.
Astrocaryum . . . . Meyer.
Elaïs . . . . . Jacq.
Cocos (g) . . . . . L.
Taxaceæ—
Podocarpus . . . . Herit.
Piperaceæ—
Piper (h) . . . . . L.
Peperomia (i) . . . R. & P.
Ottonia (j) . . . . Spren.
Ceratophyllaceæ—
Ceratophyllum . . . L.
Ulmaceæ—
Celtis . . . . . Tourn.
Moraceæ—
Morus (k) . . . . . id.
Ficus (l) . . . . . id.
Dorstenia (m) . . . Plum.
Artocarpaceæ—
Brosimum (n) . . . Sw.
Cecropia (o) . . . . L.
Coussapoa . . . . . Aubl.
Trophis . . . . . P. Br.
Urticaceæ—
Urtica (p) . . . . Tourn.
Boehmeria . . . . . Jacq.
Parietaria . . . . . Tourn.
Lacistemaceæ—
Lacistema . . . . . Sw.
Amarantaceæ—
Iresine . . . . . Willd.
Alternanthera (q) . . Forsk.
Gomphrena . . . . L.
Pupalia . . . . . Mart.
Amaranthus (r) . . . L.
Chamissoa . . . . . H.B.K.
Polygonaceæ—
Polygonum . . . . L.
Coccoloba (s) . . . Jacq.

Nyctaginaceæ—
Boerhaavia. . . . . L.
Pisonia . . . . . Plum.
Monimiaceæ—
Siparouna . . . . . Aubl.
Tetratome . . . . . Pöpp.
Lauraceæ—
Aiovea . . . . . Aubl.
Ocotea . . . . . id.
Cassytha . . . . . L.
Hernandiaceæ—
Hernandia (t)
Proteaceæ—
Rhopala (u) . . . . Aubl.
Aristolochiaceæ—
Aristolochia (v) . . . Tourn.
Plantaginaceæ—
Plantago (w) . . . . L.
Plumbaginaceæ—
Plumbago . . . . . Tourn.
Compositæ—
Odontoloma . . . . H.B.K.
Sparganophorus . . . Vent.
Vernonia . . . . . Schre.
Elephanthopus . . . L.
Rolandra . . . . . Rottb.
Liabum . . . . . Adans.
Pectis . . . . . L.
Isocarpha . . . . . R. B.
Ageratum . . . . . L.
Hebeclinium . . . . de C.
Eupatorium (x) . . . Tourn.
Mikania (y) . . . . Willd.
Erigeron . . . . . de C.
Conyza . . . . . Less.
Baccharis . . . . . L.
Pluchea (z) . . . . Cass.
Eclipta . . . . . L.
Clibadium (aa) . . . L.
Ambrosia (bb) . . . Tourn.
Parthenium . . . . L.
Wedelia . . . . . Jacq.
Melanthera . . . . Rohr.
Wulffia . . . . . Neck.
Gymnopsis. . . . . de C.
Leighia . . . . . Cass.
Bidens . . . . . L.

(a) Timit.
(b) Carat.
(c) Groa-groa.
(d) Black roseau.
(e) Pirijao.
(f) Groo-groo.
(g) Coco-palm.
(h) Black pepper.
(i) Herbe-couresse.
(j) Potomo.
(k) Fustic.
(l) Wild fig-tree.
(m) Contra-yerva.
(n) Moussara.
(o) Trumpet-tree.
(p) Nettle.
(q) Herbe-à-vache.
(r) Spinage.
(s) Sea-side grape
(t) Mirobolant.
(u) Aguatapana.
(v) Snake-root.
(w) Plantain.
(x) Herbe-à-pino.
(y) Guaco.
(z) Guérit-tout.
(aa) Barbasco.
(bb) Altamisa.

Compositæ (continued)—
Cosmos . . . . . Caï.
Verbesina . . . . . Less.
Spilanthes . . . . . Jacq.
Synedrella . . . . . Gaert.
Porophyllum . . . . Vail.
Calea . . . . . R. B.
Neurolæna (a) . . . id.
Erechtites . . . . . Rafin.
Emilia . . . . . Cass.
Leria . . . . . de C.
Sonchus . . . . . L.
Lobeliaceæ—
Lobelia . . . . . L.
Laurentia . . . . . Neck.
Centropogon . . . . Presl.
Pongatieæ—
Pongatium . . . . Jus.
Rubiaceæ—
Borreria (b) . . . . Meyer.
Spermacoce . . . . L.
Diodia . . . . . L.
Cephaelis . . . . . Sw.
Palicourea . . . . . Aubl.
Psychotria . . . . . L.
Coffea (c) . . . . . L.
Faramea . . . . . Rich.
Chiococca (d) . . . P. B.
Lygodisodea . . . . R. & P.
Nonatelia . . . . . Aubl.
Sabicea . . . . . id.
Hamelia . . . . . Jacq.
Isertia . . . . . Schreb.
Gonzalea . . . . . Pers.
Hedyotis . . . . . Lam.
Sipanea . . . . . Aubl.
Calycophyllum . . . de C.
Manettia . . . . . Mutis.
Hillia . . . . . Jacq.
Coutarea (e) . . . . Aubl.
Nauclea . . . . . L.
Bertiera . . . . . Aubl.
Randia . . . . . Houst.
Genipa . . . . . Bl.
Amaioua . . . . . Aubl.
Oleaceæ—
Linociera . . . . . Sw.
Loganiaceæ—
Strychnos . . . . . L.
Apocynaceæ—
Allamanda . . . . L.

Apocynaceæ (continued)—
Vallesia . . . . . R. & P.
Thevetia . . . . . L.
Rauwolfia . . . . . Plum.
Tabernæmontana . . L.
Echites . . . . . P. B.
Dipladenia . . . . . Al.
Asclepiadaceæ—
Metastelma . . . . R. B.
Sarcostemma . . . . id.
Philibertia . . . . . H.B.K.
Asclepias . . . . . L.
Gonolobus . . . . . Rich.
Marsdenia . . . . . R. B.
Gentianaceæ—
Voyria . . . . . Aubl.
Schultesia . . . . . Mart.
Lisianthus . . . . . P. B.
Coutoubea . . . . . Aubl.
Slevogtia . . . . . Rich.
Mitreola . . . . . L.
Spigeliaceæ—
Spigelia (f) . . . . L.
Labiatæ—
Ocimum (g) . . . . L.
Marsypianthes . . . Mart.
Hyptis (h) . . . . Jacq.
Salvia . . . . . L.
Leonurus . . . . . L.
Leonotis . . . . . Pers.
Verbenaceæ—
Lippia . . . . . L.
Verbena (i) . . . . L.
Priva . . . . . Adan.
Lantana (j) . . . . L.
Tamonia . . . . . Aubl.
Hosta . . . . . Jacq.
Vitex (k) . . . . . L.
Citharexylon . . . . L.
Duranta . . . . . L.
Petræa . . . . . Houst.
Amasonia . . . . . L.
Ægiphila . . . . . Jacq.
Myoporaceæ—
Avicennia (l) . . . . L.
Bontia . . . . . Plum.
Cordiaceæ—
Cordia (m) . . . . R. B.
Ehretiaceæ—
Ehretia . . . . . L.

(a) Herbe-à-pique.
(b) Macornette.
(c) Coffee.
(d) Petit branda.
(e) Bocas bark.
(f) Brinvilliers.
(g) Petit baume.
(h) Frombasin.
(i) Verveine.
(j) Cariaquite.
(k) Fiddle-wood, or bois-lézard.
(l) Mangrove.
(m) Cyp.

Ehretiaceæ (continued)—
- Beurreria . . . . . Jacq.
- Tournefortia . . . . R. B.
- Heliotropium . . . . L.

Convolvulaceæ—
- Evolvulus . . . . . L.
- Convolvulus . . . . L.
- Calonyction . . . . Chois.
- Quamoclit . . . . . Tourn.
- Batatas (a) . . . . . Chois.
- Pharbitis . . . . . Chois.

Hydroleaceæ—
- Hydrolea
- Wigandia

Solanaceæ—
- Nicotiana . . . . . L.
- Solandra . . . . . Sw.
- Physalis . . . . . L.
- Solanum . . . . . L.
- Cestrum . . . . . L.

Scrophulariaceæ—
- Browallia . . . . . L.
- Brunfelsia . . . . . Plum.
- Capraria (b) . . . . L.
- Herpestes . . . . . Gaert.
- Achetaria . . . . . Cham.
- Buchnera . . . . . L.
- Scoparia (c) . . . . L.
- Alectra (d) . . . . Thunb.

Acanthaceæ—
- Thunbergia . . . . L.
- Hygrophila . . . . R. B.
- Ruellia . . . . . L.
- Aphelandra . . . . R. B.
- Eranthemum . . . . id.
- Blechum . . . . . P. B.
- Dicliptera . . . . . Jus.
- Trichanthera . . . . Kunth.

Bignoniaceæ—
- Tecoma (e) . . . . Jus.
- Spathodea (f) . . . Pal.
- Bignonia (f) . . . . Jus.

Gesneriaceæ—
- Columnea . . . . . Plum.
- Besleria . . . . . Plum.
- Drymonia . . . . . Mart.
- Gesnera . . . . . id.
- Gloxinia . . . . . Herit.
- Rytidophyllum . . . Mart.
- Conradia . . . . . id.

Crescentiaceæ—
- Crescentia (g) . . . L.

Utriculariæ—
- Utricularia . . . . L.

Myrsinaceæ—
- Myrsine . . . . . L.
- Ardisia . . . . . Sw.
- Jacquinia . . . . . L.

Sapotaceæ—
- Chrysophyllum (h) . . L.
- Sabatia . . . . . Sw.
- Achras (i) . . . . P. B.
- Lucuma . . . . . Jus.

Ebenaceæ—
- Diospyros . . . . . L.

Ericaceæ—
- Clethra . . . . . L.
- Thibaudia . . . . . Par.

Umbelliferæ—
- Hydrocotyle . . . . Tourn.
- Spananthe . . . . . Jacq.
- Eryngium . . . . . Tourn.

Araliaceæ—
- Panax . . . . . L.

Ampelidaceæ—
- Cissus . . . . . L.

Loranthaceæ—
- Viscum . . . . . L.
- Loranthus . . . . . L.

Menispermaceæ—
- Cissampelos (j) . . . L.

Myristicaceæ—
- Myristica (k) . . . . L.

Anonaceæ—
- Uvaria (l) . . . . L.
- Anona (m) . . . . L.

Dilleniaceæ—
- Curatella (n) . . . . L.
- Doliocarpus . . . . Rol.
- Tetracera . . . . . L.

Ranunculaceæ—
- Clematis . . . . . L.

Papaveraceæ—
- Argemone . . . . . Tourn.

Cruciferæ—
- Nasturtium (o) . . . R. B.
- Lepidium . . . . . id.
- Sinapis . . . . . Tourn.

Capparidaceæ—
- Cleome . . . . . de C.

(a) Sweet potato.
(b) Thé-pays.
(c) Sweet broom.
(d) Cane-killer.
(e) Poui.
(f) Cable-vine.
(g) Calabash.
(h) Cainito.
(i) Sapodilla and Balata.
(j) Pareira-brava.
(k) White cedar.
(l) Fruta de Burro.
(m) Sour-sop.
(n) Chaparrio.
(o) Water-cress.

Capparidaceæ (continued)—
Capparis . . . . . L.
Cratæva (a) . . . . L.
Hermupoa . . . . . Löeffl.
Nymphæaceæ—
Nymphæa (b) . . . Neck.
Droseraceæ—
Drosera . . . . . L.
Violaceæ—
Alsodeia . . . . . Thou.
Sauvagesiaceæ—
Sauvagesia . . . . L.
Turneraceæ—
Turnera . . . . . Plum.
Samydaceæ—
Samyda . . . . . L.
Casearia . . . . . Jacq.
Bixaceæ—
Bixa (c) . . . . . L.
Flacourtia (d) . . . Comm.
Passifloraceæ—
Ryania . . . . . Vahl.
Passiflora (e) . . . . Jus.
Papayaceæ—
Carica (f) . . . . . L.
Cucurbitaceæ—
Feuillea (g) . . . . L.
Melothria . . . . . L.
Anguria . . . . . L.
Bryonia (h) . . . . L.
Luffa (i) . . . . . Tourn.
Momordica (j) . . . L.
Begoniaceæ—
Begonia (k) . . . . L.
Cactaceæ—
Cereus . . . . . Hau.
Rhipsalis . . . . . Gaert.
Opuntia (l) . . . . Tourn.
Pereskia (m) . . . . Plum.
Phyllocactus . . . . Link.
Portulaceæ—
Sesuvium . . . . . L.
Cypselea . . . . . Turp.
Portulaca (n) . . . . Tourn.
Talinum . . . . . Adans.
Caryophyllaceæ—
Drymaria . . . . . Willd.

Phytolaccaceæ—
Petiveria . . . . . Plum.
Rivina . . . . . L.
Microtea . . . . . Sw.
Phytolacca . . . . Tourn.
Malvaceæ—
Urena . . . . . L.
Pavonia . . . . . Cav.
Hibiscus (o) . . . . L.
Paritium . . . . . A. Jus.
Thespesia . . . . . Corr.
Sida (p) . . . . . Kunth.
Malachra (q) . . . . L.
Sterculiaceæ—
Pachira . . . . . Aubl.
Bombax (r) . . . . L.
Ochroma (s) . . . . Sw.
Helicteres . . . . . L.
Sterculia (t) . . . . L.
Byttneriaceæ—
Buttneria . . . . . Löeffl.
Guazuma (u) . . . . Plum.
Waltheria . . . . . L.
Melochia . . . . . L.
Tiliaceæ—
Sloanea . . . . . L.
Apeiba . . . . . Aubl.
Triumfetta . . . . . Plum.
Muntingia . . . . . L.
Ternstroemiaceæ—
Marila . . . . . Sw.
Quuna . . . . . Aubl.
Clusiaceæ—
Clusia (v) . . . . . L.
Calophyllum (w) . . L.
Moronobea (x) . . . Aubl.
Marcgraviaceæ—
Norantea (y) . . . . Aubl.
Marcgravia . . . . Plum.
Hypericaceæ—
Vismia (z) . . . . Vell.
Meliaceæ—
Trichilia . . . . . L.
Guarea . . . . . L.
Carapa (aa) . . . . Aubl.
Cedrelaceæ—
Cedrela (bb) . . . . L.

(a) Toco.
(b) Water-lily.
(c) Arnotto.
(d) Governor-plum.
(e) Granadilla.
(f) Papaw.
(g) Secua.
(h) Bryony.
(i) Torchon.
(j) Mexicain.
(k) Wood-sorrel.
(l) Prickly-pear.
(m) Gooseberry.
(n) Purslane.
(o) Ochro.
(p) Broom-plant.
(q) Mallow.
(r) Ceyba.
(s) Cork-wood.
(t) Mahaut.
(u) Elm.
(v) Matapalo.
(w) Galba.
(x) Mountain-mangrove.
(y) Prince of Wales' feather.
(z) Bois-sang.
(aa) Carapa, or crapaud.
(bb) Cedar.

Malpighiaceæ—
- Hiræa . . . . . Jacq.
- Triopteris . . . . . L.
- Tetrapteris . . . . Car.
- Banisteria . . . . . L.
- Stigmaphyllon . . . A. J.
- Bunchosia . . . . . Rich.

Erythroxylaceæ—
- Erythroxylum . . . L.

Sapindaceæ—
- Cardiospermum . . . L.
- Seriana . . . . . Plum.
- Paullinia . . . . . L.
- Sapindus (a) . . . . L.
- Melicocca (b) . . . . L.
- Dodonæa . . . . . L.

Polygalaceæ—
- Polygala . . . . . L.
- Catacoma . . . . . Bent.
- Securidaca (c) . . . L.

Hippocrateaceæ—
- Hippocratea (d) . . . L.
- Tontelea . . . . . Aubl.

Rhamnaceæ—
- Gouania . . . . . Jacq.

Chailletiaceæ—
- Chailletia . . . . . de C.

Euphorbiaceæ—
- Pedilanthus . . . . Neck.
- Euphorbia (e) . . . L.
- Dalechampia . . . . Plum.
- Hura (f) . . . . . L.
- Hippomane (g) . . . L.
- Microstachis . . . . A. Jus.
- Tragia . . . . . Plum.
- Acalypha . . . . . L.
- Omphalea . . . . . L.
- Mabea . . . . . Aubl.
- Jatropha (h) . . . . Kunth.
- Curcas (i) . . . . Adans.
- Croton . . . . . L.
- Phyllanthus . . . . Sw.
- Stillingia . . . . . Gard.

Anarcadiaceæ—
- Anarcadium (j) . . . Rottb.

Spondiaceæ—
- Spondias (k) . . . . L.

Burseraceæ—
- Icica . . . . . Aubl.
- Bursera . . . . . Jacq.

Connaraceæ—
- Connarus . . . . . L.
- Omphalobium . . . Gaert.

Ochnaceæ—
- Gomphia . . . . . Shreb.

Simarubaceæ—
- Quassia (l) . . . . de C.

Rutaceæ—
- Esenbeckia (m) . . . Kunth.

Oxalidaceæ—
- Oxalis . . . . . L.

Combretaceæ—
- Bucida (n) . . . . L.
- Terminalia (o) . . . L.
- Conocarpus (p) . . . Gaert.
- Poivrea . . . . . Comm.
- Combretum . . . . Löeffl.
- Cacoucia . . . . . Aubl.

Rhizophoraceæ—
- Rhizophora (q) . . . Lam.

Legnotideæ—
- Cassipourea . . . . Aubl.

Onagraceæ—
- Jussieua . . . . . L.

Lythraceæ—
- Ammannia . . . . Houst.
- Crenea . . . . . Aubl.
- Antherylium . . . . Rohr.

Melastomaceæ—
- Spennera . . . . . Mart.
- Heteronoma . . . . id.
- Chactogastra . . . . de C.
- Arthrostemma . . . Par.
- Osbeckia . . . . . L.
- Pterolepis . . . . . de C.
- Clidemia . . . . . Don.
- Tchudya . . . . . de C.
- Ossaca . . . . . id.
- Sagræa . . . . . id.
- Conostegia . . . . Don.
- Diplochiton . . . . de C.
- Pogonorhynchus . . . Cr.
- Henriettea . . . . . de C.
- Loreya . . . . . id.
- Tetrazygia . . . . Rich.
- Miconia . . . . . R. & P.
- Glossocentrum . . . Cr.
- Cremanium . . . . Don.
- Chaenopleura . . . . Rich.

(a) Savonette.
(b) Quenepe.
(c) Liane-paques.
(d) Sto. Domingo-nut.
(e) Euphorbs.
(f) Sand-box.
(g) Manchineel.
(h) Manioc.
(i) Medicinier.
(j) Cashew.
(k) Wild-plum, or monbin.
(l) Bitter ash.
(m) Gasparil.
(n) Olivier.
(o) Almond-tree.
(p) Black mangrove.
(q) Red mangrove.

Myrtaceæ—
- Psidium (a) . . . . L.
- Myrtus (b) . . . . Tourn.
- Myrcia . . . . . de C.
- Marlierea . . . . . St. Hil.

Lecythidaceæ—
- Lecythis (c) . . . . Löefll.
- Couroupita (d) . . . Aubl.

Drupaceæ—
- Prunus (e) . . . . . L.

Chrysobalanaceæ—
- Chrysobalanus (f) . . L.
- Hirtella . . . . . L.
- Parinarium . . . . Jus.

Papilionaceæ—
- Crotalaria . . . . . L.
- Psoralea . . . . . L.
- Indigofera (g) . . . L.
- Tephrosia . . . . . Pers.
- Sabinea . . . . . de C.
- Sesbania . . . . . Pers.
- Æschinomene . . . L.
- Desmodium . . . . de C.
- Rhadinocarpus . . . Vog.
- Clitoria . . . . . L.
- Neurocarpum . . . . Desy.
- Centrosema . . . . de C.
- Galactia . . . . . P. B.
- Canavalia . . . . . de C.
- Mucuna (h) . . . . Adans.
- Erythrina (i) . . . . L.

Papilionaceæ (*continued*)—
- Phaseolus (j) . . . . L.
- Dolichos (k) . . . . L.
- Eriosema . . . . . de C.
- Rhynchosia . . . . id.
- Abrus (l) . . . . . L.
- Amerimnum . . . . P. B.
- Drepanocarpus . . . Mey.
- Machærium (m) . . . Pers.
- Andira (n) . . . . Lam.
- Mora (o) . . . . . Bent.
- Cæsalpinia . . . . Plum.
- Parkinsonia . . . . id.
- Cassia (p) . . . . . L.
- Hymenæa (q) . . . L.
- Caulotretus (r) . . . Rich.
- Bauhinia (s) . . . . Plum.
- Macrolobium . . . . Schr.
- Copaifera (t) . . . . L.
- Brownea (u) . . . . Jacq.
- Swartzia . . . . . Willd.
- Pentaclethra . . . . Bent.
- Entada . . . . . L.
- Desmanthus . . . . Bent.
- Mimosa (v) . . . . L.
- Acacia (w) . . . . Willd.
- Calliandra . . . . . Bent.
- Inga (x) . . . . . P. B.
- Pithecolobium . . . Mart.
- Enterolobium . . . id.

(a) Guava.
(b) Pimento, or bois d'Inde.
(c) Guatecare.
(d) Bomb-tree.
(e) Noyau.
(f) Icacos.
(g) Indigo.
(h) Cowhage.
(i) Bois-immortel.
(j) Beans.
(k) Stump-pea.
(l) Liquorice.
(m) Roble (?).
(n) Angelim.
(o) Mora.
(p) Stinking-weed, and others.
(q) Locust.
(r) Tasajo-liane.
(s) Pata-de-vaca.
(t) Balsam-capivi.
(u) Palo-rosa.
(v) Sensitive-plant.
(w) Acacia.
(x) Pois-doux.

SUGGESTIONS

FOR

Organizing a Central Agricultural Committee,

AND

ESTABLISHING MODEL FARMS IN THE ISLAND OF TRINIDAD.

To His Excellency the Right Honourable Lord Harris, Governor of Trinidad.

My Lord,—Under the present depressed state of agricultural and other affairs in Trinidad, and at a time when entirely new principles seem to govern the policy of the British Government and the Colonial Office with regard to the colonies; when we are left, in total reliance on our own resources, to struggle with foreign slave-countries raising similar produce to our own—we must strain every nerve to continue the unequal contest and preserve to our children the landed property which is their sole inheritance.

We cannot depend upon a protection, which is most peremptorily refused to our demands; immigration and an adequate supply of human labour are precarious aids; the wisest step, therefore, as also the surest, is to avail ourselves of those means which are placed within our reach, namely—science and improved methods, both in cultivation and manufacture.

But, my lord, if individual information, and facts gathered by a few planters, may ultimately be of service to colonial agriculture, it is evident that facts carefully collected and collated by order of a competent body, systematically arranged by well-informed and practical men, so as to form a system of local husbandry based thereupon, and made public by means of the local press—must be of the greatest benefit to the landholders and the community at large.

In countries, such as England, where thousands of acres are

the property of wealthy landlords, where scientific information is at ready command, private individuals may, either by their own exertions or by liberal encouragements, correct the theory or improve the practice of agriculture; and yet agricultural societies, even there, are of the greatest advantage.

But in countries, like France, where properties are subdivided into small allotments, and particularly in such colonies as the West Indies, where the proprietary body is either impoverished or actually bordering on ruin, individual exertions generally remain sterile, and voluntary societies are powerless to do good.

It has, therefore, been deemed necessary in France to form model farms, and to organise a "Central Board of Agriculture" under the control of the government.

The West India islands, compared with France, are in a still worse position than the latter as compared with England; and model farms, with agricultural schools supported by the government, are the only channels through which to convey to the people theoretical as well as practical instruction, and the only means for eventually improving the art of husbandry in this archipelago.

Sincerely impressed with this conviction—myself a humble individual, but deeply interested in the prosperity of this fine colony—I presume to intrude on your lordship's valuable time by offering, for your perusal, the following ideas, or sketch of a model farm. Such an establishment, properly conducted, would, in my opinion, be of no less benefit to Trinidad than any past or present scheme for immigration.

At no other period, perhaps, will the colonial government have a better opportunity of purchasing, at a moderate rate, one of the numerous sugar-estates now abandoned, and investing the same as colonial property. In case the government could spare a sufficient sum of money, two model farms might be established —one in Victoria, and the other in St. George; say, in Naparima for the former, and Tacarigua, or St. Joseph, for the latter county.

The cultivation of the sugar-cane and the manufacture of sugar should be the chief object of those establishments; but the culture of cacao and the raising of ground-provisions should also be liberally encouraged; in fact, the farms would be expected to produce a full supply of vegetable food for the people thereon employed.

The farm should be placed under the management of a "director," a person conversant with the various sciences connected with agriculture; viz., with botany, chemistry, meteorology, and possessing a knowledge of soils, together with the principles of agricultural science; certain moral qualifications should also be exacted as a standard of character.

The whole administration, and conduct of the farm, should be placed entirely under his control and management.

It would be the duty of the "director" to keep correct books and accounts, referrible to the quarterly or monthly examination of a "Central Agricultural Committee," to be by them investigated and approved previous to payment.

The director to have a liberal salary—independent of which he should receive no allowance either for overseers, servants, or other dependents.

Whereas a model farm would be of very little avail to the community without a school being attached to it, from which, as a source, the youth of the colony might draw information, a building could be fitted up on the farm for the reception of nine or more scholars above the age of fourteen years; such scholars to be admitted on their producing a certificate of good character, and sufficient proficiency in reading, writing, and arithmetic.

The pupils to be governed by stringent regulations, and to be exclusively placed under the authority of the director.

The course of instruction to be both theoretical and practical.

Theoretical instruction to consist of lectures on the principles of botany, chemistry, meteorology, and agrology; also of explanations of the various implements and operations of husbandry. The lectures to be delivered once in the week, and to be public. The pupils to be furnished with elementary books on the various sciences; they might also be required to take notes of the lectures delivered.

The practical instruction to be conducted as follows:—

1st year.—The pupil to superintend everything connected with the live-stock and farming-implements. He should, under the control of the director, attend to the pasture, fences, stables, carts, ploughs, &c., and have under his authority the cartmen, crook-boys, &c. He should learn to break and train animals, to dress and bleed the same when sick, to drive a cart, conduct a

plough, and to attain a ready skill, manual or directory, in the usage of other implements.

2nd year.—The pupil would superintend the field-work, the drainage and preparation of land, planting, weeding, cutting canes, and other operations—under the immediate control of one of the senior, or third year's pupils.

3rd year.—During the three months immediately following the end of the crop, say, during June, July, and August, the senior pupils will superintend the field-labours, together with the second year's pupils; they will then take under their charge all the preparations for the ensuing crop-season—such as the repairing and putting in order the mill and the boiling-house, preparing specifications for mason, cooper, and carpenter's work, including the necessary materials. During the crop it will be their duty to superintend the boiling-house, and to conduct all operations connected with the manufacture of sugar.

A public examination to take place at the end of the year, and a prize to be awarded to each class—unless, however, the pupils should not be found sufficiently improved.

Each pupil to pay a premium of 200 dollars for the first year, 100 dollars for the second, and to receive 100 dollars as overseer's salary for the third year. The money received to be placed to the account or credit of the farm. The pupils to be boarded at the expense of government for the two first years, and by the farm during the third year—the latter as part of overseer's salary.

Although I attach great importance to chemical analyses, yet I am of opinion that superior and more economical results would be gained, without material difference to the colonists, by obtaining analyses of soils and plants from chemists in Europe, rather than by forming a laboratory and having a chemist attached to the establishment in the island.

"Central Agricultural Committee."—Events have fully proved that voluntary societies do not and cannot beneficially operate, and the reasons are obvious. It then becomes the duty of the government to take the matter into their own hands. A "Central Agricultural Board, or Committee," should be established by law, to consist of six or more members—the director or directors of the model farms, and the government botanist, being *ex-officio* members; the others to be appointed by the governor. All

the members required punctually to attend the meetings of the "Committee," under a penalty of £1 for non-attendance unless good excuse is given: the botanist to act as secretary.

It would be the duty of the "Central Committee" to prepare a general plan for the management of the model farm: they should examine the books and accounts of the director, and approve the latter for payment, on being found correct. It would also be within the province of the "Central Committee" to collect facts connected with the agriculture of the colony; and, for that purpose, to prepare such local questions as may be deemed of importance, for circulation among the proprietors of estates and intelligent planters, in the different parts of the colony. A digest of interesting facts, observations, and contributions should be published, for general information, in a journal, to be entitled, the "Trinidad Annual Register of Agriculture,"—the said journal to be aided and supported by the government.

As the model farm ought to be made, as far as possible, a self-supporting establishment, all net revenues should be employed —first, to repay the purchase-money; and this being effected, the entire proceeds should thenceforth be kept as a reserve against contingencies, and for the general promotion of agricultural objects and interests.

Although the model farm and the "Central Committee" are here made to be mutually dependent, they may still exist separately and independently. I am, however, fully aware of the many difficulties which may attend the establishment of a model farm in Trinidad. Prejudice and routine will, under existing circumstances, raise their cry against such an institution; and but a few, it is to be feared, will be awakened to its advantages—I would say, to its blessings. On the other hand, the formation of a "Central Committee" rests entirely with the executive, and, if properly organised, would, I believe, work successfully.

Men are fond of distinction, and, were the members of the "Central Committee" to derive some importance from the appointment, it is to be anticipated they would gladly devote time and attention to the object of the institution. I therefore suggest that the committee should be consulted on all matters connected with, or affecting the agricultural interests of the colony, as is the case in France. That body would then be, not a mere sugar-planters' committee, but would include cacao and other planters. It

would thus be enabled to turn its attention to the cultivation of ground-provisions, tobacco, and oleaginous plants, the growth of which could be encouraged by the sale of crown-lands to such natives and immigrants as might be disposed to devote labour or capital to that species of culture.

The committee should be appointed, primarily, by the governor —the vacancies to be afterwards filled from a list of candidates prepared by the committee, the qualifications for the distinction being of a peculiar description.

I beg, in continuation, to offer a few remarks on the model farms.

It is to be expected that any scheme for the formation of model farms in Trinidad, will meet, if not with disparaging criticism, or even opposition, at least with perfect indifference. The capital to be invested in the purchase and improvement of the farm, will be considered as so much cash abstracted from the public purse, to gratify a chimerical project. Partly to invalidate this objection, I consider that the formation of the "Central Committee" ought to precede the establishment of the farm. The control exercised by the former, would be a sort of guarantee to the public of success in the latter.

We have already had superabundant proofs that it is difficult to rouse the planters even to a sense of their best interests. If, on the one hand, we find reasons for this in their ignorance of agricultural science and the art of husbandry, on the other, we may also trace this apathetic unconcern to the following cause :—

Perceiving, in the midst of their distress—brought on either by the present commercial crisis, or the glut of their staple, which has been thrown into, and still remains in the market—that the British government have abandoned their former policy with regard to slave-produce, the colonists are induced to believe that the mother-country is determined to allow them to die a lingering death, rather than to afford them support by protection. Strongly impressed with that conviction, they regard the new policy of the government as the chief, nay, the sole cause of their present grievances, and they are still under the impression, that no remedy will alleviate their distress, but the one coupled with measures of relief from the home government. The consequence is, that very little has been attempted in the improvement of

colonial agriculture: and whilst our eyes have been widely open to the dereliction of the mother-country, they have been closed, and are still blind, to our own faults and short-comings.

I readily admit that the reproaches urged by her Majesty's ministers and our adversaries are, to a certain extent, justly grounded; but, however presumptuous I may appear in offering an opinion in a matter so grave, I dare contend that much credit is not due to our opponents at home for ascribing the sum total of our misfortunes to our ignorance, our want of industry and energy. Wrong we *may* be in deducing our distresses from a single source; but still more faulty are those who trace the same to far less powerful causes; viz., lack of information and despondency—the latter of these being but a very natural consequence of our present position.

But, should it be for once admitted that ignorance and supineness are the real causes of our present miserable position, her Majesty's minister for the colonies could not offer any reasonable objection to the adoption of a plan, which, in all probability, would effectually and widely contribute as much to a diffusion of knowledge as to the general improvement of agriculture, and which must eventually advance the prosperity of the colony and the welfare of its inhabitants.

As to the probable success of the undertaking, I may refer to the beneficial results already secured by individual efforts, and from the encouragements so generously afforded by your Excellency. It is true that, on a candid examination of the *practical* advantages hitherto obtained, we are led to confess that little has, as yet, been realised; but, when we take into consideration that the stronghold of prejudice has been shaken, and that the minds of many have been opened to better doctrines, we have reason to rejoice at the result, and to hope for further improvement.

The formation of a school connected with the model farm, is, in my opinion, the surest and speediest plan for sweeping away the accumulated rubbish of errors that has, for years, obstructed the path of progress, for creating a new era in our agricultural economy, and for facilitating the onward march of a steady reform.

In fact, there is no systematic or rational instruction or training, under our present routine, for those who look forward to agricultural pursuits. A youth is, for a few years, engaged as an overseer by a manager or proprietor, who takes but little or no

trouble in schooling his subordinate, to whom, even otherwise, he could impart but very little information. If the youth be active, intelligent, and honest, he turns out to be a *tolerable* manager, after some three or four years of apprenticeship. But he, like his former master, must depend upon his ignorant boilerman for the quality of his sugar, and in the entire process of manufacture, since that branch of plantership—the most difficult and the most important—does not form a part of the practical instruction of the planter, but is entirely left to the blind routine of a man who knows nothing of the composition of the juice of the cane, or of the effects of those agents he daily employs to extract therefrom a saccharine compound. No wonder, then, if we send to the home market the filthy produce commonly called muscovado, with an immense per centage of uncrystalised sweets in the form of molasses. We have strong motives to complain of a scarcity of labour, but our opponents have also some reasons for asserting that we do not know how to make available the labour we already do, or can, command. So long as we hoped for protection, such language might have been deemed treasonable to our own interests; but at the present crisis, it is only true, and ought to have the influence of truth. Skill and science are, indeed, the grand *desiderata;* but, if science and practical instruction be not placed within the reach of the planters, they certainly cannot be expected to improve by mere desire or intuition.

This, however, is not all. If we bring ourselves to inquire and scrutinise, we may discover further difficulties arising either from absenteeism, or from that reluctance to agricultural pursuits which is characteristic of the emancipated population.

More than one half of the sugar-estates of the colony has become the property of merchants at home—a natural consequence of the exorbitant rates of interest paid to those capitalists for loans of money, supplies, and other charges, a result, also, greatly encouraged and hastened by the extravagant tactics, and the *laisser-aller* (almost allied to fatalism) of the planters. Those merchants who have by force become proprietors, find themselves in nearly the same predicament as the former owners —a want of good managers, whilst attorneys unable efficiently to superintend or control the general management of their properties are active agents in their ruin. It is therefore to be anticipated that the absentee proprietors, labouring under the

same disadvantages as the old propietary body of the island, will be ultimately roused to a sense of their own interests, and adopt some better system for the management of their properties. The following would be, in my opinion, the best and most advantageous, both for that class of proprietors and for the general welfare:—The manager should become a participator in the net profits of the estate: but, as it would be but justice to insure to him a regular maintenance, he should also receive a small fixed salary—say of 500 dollars—in addition to 10 per cent. of the net proceeds. Under this system, the manager would have the sole and entire superintendence of the property, except in such cases in which material changes should be required, such as alterations in the general disposition of the buildings, apparatuses, &c. He should be allowed to procure his supplies at the lowest rate, instead of drawing them from the attorney's store. The attorney would be furnished with the pay-lists and all other accounts; he would ship the produce and pay the necessary duties and expenses thereon, as also all amounts due by the manager in service of the property, after being furnished with authentic vouchers. The manager would prepare a detailed estimate of probable expenditure for the ensuing twelvemonths—from the 1st of July, each year. On the other hand, he should be entitled to demand and receive exact accounts of the sales and proceeds of produce.

This plan is simple, just, and safe. The manager, placed in this position, will have the same interest in the estate as the proprietor himself. Some prospects will be thus afforded him of improving his condition by industry; he will be encouraged to settle himself comfortably in marriage, and may, eventually, become a proprietor in his own right; also, in case the absent proprietor should be desirous of parting with his estate, he could safely enter into an advantageous arrangement with his former manager.

Now it is evident that the absentee proprietor cannot adopt the proposed plan if the class of managers, generally, do not offer sufficient professional guarantees. The formation of an agricultural school, and certificates delivered by the "Central Committee," would afford such guarantees; and the adoption of the proposed plan would also be a powerful inducement to the youth of the colony to improve themselves in the science of agriculture and the art of husbandry.

The reluctance evinced by all classes to field occupations, has its origin in a deep-rooted prejudice, the offspring of slavery. Rural occupations are generally deemed a loss of caste in plodding labourers, and are considered as the special province of the ignorant. The command of God is, "In the sweat of thy face shalt thou eat bread," but slavery had made the command of God a prescription of man; and the slave, obliged to toil for the benefit of his master, viewed the obligation of working as a curse, whilst the master regarded the occupations of a slave (except in an interested light) as unworthy of his attention. It is, to all, clear and evident that, whilst we are loudly demanding an increase of field-labour, there is a glut of tradesmen and petty shopkeepers in the island. An agricultural school would have the effect of ennobling rural pursuits, and of raising agricultural occupations in the estimation of the community. This is the reason that the strictest obligations should characterise the training and service of the pupils, as also a high salary be paid to the director of the farm —the former to insure the stability and promote the final objects of the establishment, the latter, to secure the services of a respectable and competent individual.

The pupils should be boarded by the director, on an adequate allowance being made for the necessary expenditure.

In conclusion, I suggest that the growth of fruit-trees, ground-provisions, and the more delicate vegetables—those of Europe included—should be encouraged. In aid of this design, better methods of culture could be easily and successfully substituted for the present routine, and superior agricultural implements be made to supersede the hoe and cutlass. Plantains, manioc, Indian corn—even tanias, yams, and potatoes, might be cultivated with the plough and the cultivator. Let the example be exhibited on the model farms, and many of the middle class will be, at once, satisfied to cultivate their own lands, and thus secure an honourable subsistence to their families; whilst a cheap and abundant supply of wholesome provisions, could be regularly furnished to our markets. The white man will, himself, prepare his field with the plough and harrow, and drive the cultivator through his plantain walks or young manioc rows; the coloured man, by improving his condition, will rise in the social scale, and those baneful prejudices—the greatest obstacle to the prosperity of this

fine island—will then vanish like noxious exhalations before the rising sun.

I have the honour to be, my lord,
Your Excellency's most obedient humble servant,
L. A. A. de Verteuil, M.D.P.

Port-of-Spain.

Such was the scheme I submitted for Lord Harris' consideration some time in the year 1850. My opinions have not since changed, and I am still strongly convinced that the establishment of a model farm, with a school of agriculture attached, would confer incalculable benefits on the community. Moreover, as juvenile depravity is on the increase, and the number of youthful criminals augmenting to an alarming extent, such an establishment might be rendered subservient as a penitentiary for that class of offenders, where they could receive primary instruction, religious teaching, and industrial training.

To the plan, in the abstract, no one, I believe, can offer any serious objection; by many, I know, its realisation will be deemed impossible: to the latter, I answer—it has been realised elsewhere to the fullest extent, and with manifold advantages.

DISCOVERY OF COALS.

"Excepting Mr. Charles Deville, who made but a short stay in Trinidad, no professional geologist has ever visited the island." This I was writing in the beginning of 1856. Since making this statement, two geologists, Messrs. Wall and Sawkins, have been sent to the West Indies by the home government, with a view to surveying such of the islands as would like to contribute to the expenses of these gentlemen. The offer was eagerly accepted by the governor, Sir Charles Elliot, the money readily voted by the legislative council, and Messrs. Wall and Sawkins were invited to begin their geological tour with Trinidad, and they there arrived in October, 1856.

As far as mineral riches are concerned, the opinion of these gentlemen is not favourable to the colony; but, what is perhaps more important, they have lately discovered seams of coal, which is reported to be of the best quality; and experiments made on the spot, prognosticate very favourable results. Some coke prepared from the Trinidad coals is said to be equal to the best that can be procured from England. The results, though so far promising, nevertheless need to be confirmed by further and comparative experiments; consequently, quantities of the precious substance have been sent to England for the purpose. The matter is, at present, in the hands of the "Society of Geologists," and the colonists are waiting with anxiety, but also with some degree of confidence, the verdict of that learned body. In case the expectations formed on a first examination are confirmed,

this discovery of coals will be a most valuable addition to the already numerous and valuable resources of Trinidad.

The coal has been found near Pointe Noire, between Manzanilla and the mouth of the Oropuche; and the coal district would extend, according to all appearances, across the counties of St. Andrew, St. George, and Caronis, all along the central range, to Couva and Savanetta. It has already been surveyed on an extent of about nine miles, heavy rains having put a momentary check to further investigations; they will soon be resumed, however, to be completed, it is hoped, to the satisfaction of all. At Pointe Noire, the coal is quite near the surface, and consequently can be worked at little expense, and with prospects of immediate return.

PARIS, *November* 5, 1857.

WARDENS' ORDINANCE.

TRINIDAD.

No. 13—1852.
1st October.

An Ordinance

Enacted by the Governor of the Island of Trinidad, by and with the advice and consent of the Council of Government thereof,

For amending and consolidating the Law with regard to the Appointment of Wardens, and the powers and duties of such Wardens.

HARRIS.

I. *Ordinances of 4th September*, 1849, *6th February*, 1851, *and 10th April*, 1852, *repealed. All appointments of wardens, &c., made under provisions of previous Ordinance to be saved.*

IV. *Warden to be charged with the maintenance of the public peace, &c., and for such purpose to swear special constables.*—And be it enacted, That every Warden, during his tenure of office, shall be charged with the maintenance of the public peace within his ward, and for such purpose shall have power from time to time to swear in such persons as he shall see fit, to act as special constables, and may bind any one to the peace who shall make an affray in his presence, and may command any constable to assist him in the preservation of the peace within his ward.

V. *Governor may make rules for the wardens.*

VI. *A warden ceasing to hold office, all books and papers in his possession to be delivered to his successor.*

VII. *Oaths of office.*

VIII. *Wardens to be charged with the making and keeping in repair the ward roads, the cost of establishing public schools of instruction, &c.*—And be it enacted, That each ward shall be charged with the making and keeping in repair of the public roads, not being royal roads, within the ward, the cost of establishing and maintaining public schools of instruction, and the payment of the teachers of such schools, the establishment of houses of refuge for the destitute poor incapable of labour, the establishment and maintenance of dispensaries, and the cost of carrying into effect and enforcing all sanitary regulations for the preservation of public health within the ward, the expenses of the burial of paupers, and inquests, the costs of printing and

advertising of notices and other matters relating to the business of the ward, and shall also be bound to contribute to the expense of the repairs of the royal roads within the ward, and of the general police force of the colony.

IX. *Warden to be charged with the collection and receipt of all local taxes and assessments, &c.*—And be it enacted, That every such warden, within his ward, shall be charged with the collection and receipt of all local taxes and assessments, and all fines and forfeitures, and shares of fines and forfeitures payable to the uses of the ward, or of the district of the county within which such ward shall be comprised, and with the registration of lands and houses, and of births, deaths, and marriages within such ward; and with the making and revising of the lists of persons resident within the ward, and qualified to serve as jurors, and with the summoning of such jurors.

X. *Warden to superintend public roads, and to prevent squatting.*

XI. *Warden to keep a registry of all holders of land or houses in his ward.*

XII. *Surveyor-General to furnish to each warden a map of his ward.*

XIII. *Every person in possession of any land or house to make a return to the warden of the ward.*—And be it enacted, That every person having the possession in his or her own right, or in that of his wife, or as attorney, or agent, or guardian, or committee of any other person, of any land or house within any ward, who shall not have made a return of such land or house under the provisions of the said Ordinance of the 4th day of September aforesaid, shall within the space of one calendar month next after the commencement of this ordinance, send in to the warden of the ward within which such land or house may be situated, a return in writing, according to such form as may from time to time be approved by the Governor, of all lands or houses within such ward, of which such person may have such possession, and the local situation, number, quality, or extent of such lands or houses, and the respective quantities of such lands in cultivation, pasture, or wood, distinguishing the nature of such cultivation, and the tenure or right by which he shall hold such lands or houses.

XIV. *Every person coming into possession of any land or house to make a return of the same to the warden of the ward within one month.*

XV. *Return of produce grown or manufactured on any plantation or lands to be made annually to the warden.*

XVI. *Penalty on default of making returns or any false return.*

XVII. *Warden or constable to detain any lumber, &c. suspected to be cut on crown lands. Lumber, &c. to be taken to be condemned and sold.*

XVIII. *Penalty on persons cutting lumber, &c., on Crown Lands.*

XIX. *Where action would be maintainable against hundred in England, action shall be maintainable against inhabitants of ward.*—And be it enacted, That where, according to the law of England, an action or summary proceeding against the hundred of any county would be maintainable at the suit of the party injured, for damage done to any property real or personal within such hundred, an action or summary proceeding shall in like cases be maintainable against the inhabitants of any ward, at the suit of the party damaged, to recover full compensation for such damage, and process in all such cases shall be served on the warden of the ward.

XX. *Costs of prosecution of crimes to be borne by the ward in which they are committed.*—And be it enacted, That the costs of every prosecution before the Supreme Criminal Court, and of the witnesses for the prosecution against any person indicted of any felony, any assault with intent to commit felony, any attempt to commit felony, any riot, any misdemeanour, for receiving any stolen property knowing the same to have been stolen, any assault upon a constable or officer of the Customs in the execution of his

duty, or upon any person acting in aid of such constable or officer, such costs to be certified by the registrar of the said court, shall be a charge on the funds of the ward in which the offence shall have been committed, and shall be charged by and allowed to the colonial treasurer in his accounts with the warden of such ward.

XXI. *Expenses of maintaining persons admitted into hospitals or poor-houses to be borne by the ward in which such persons last resided.*—And be it enacted, That where any person shall be admitted into any hospital or poorhouse supported from the public funds of the colony, the expense of the maintenance, medical care and treatment, of such person, at the rate of 1s. sterling for every day during which such person shall be an inmate of such hospital or poorhouse, shall be a charge on the funds of the ward in which such person shall have been resident immediately previous to his being admitted into such hospital; and the house surgeon or other officer in charge of such hospital, shall once in every month certify to the colonial treasurer the name of such person so admitted into such hospital, and the number of days during which he shall have been an inmate of such hospital; and the amount of such expenses being allowed by the warden of the ward, shall be charged by the Colonial Treasurer against such ward; and in case any question shall arise as to the particular ward by which such expenses shall be borne, such question shall be decided by the Governor.

XXII. *Moneys arising from licences to sell rum to be funds of the ward in which the shop is situate.*

XXIII. *A rate to be raised on all lands, &c., in each ward.*

XXIV. *Values at which land shall be rated.*—And be it enacted, That such rate shall be made on all houses and lands for the year 1853, according to the assessment and valuation which under the provisions of the said Ordinance of the 4th day of September aforesaid, was to be made on or before the 13th day of September of this present year, and afterwards on all houses, mines, and quarries, upon an estimate of the rent at which the same might reasonably be expected to let from year to year, and upon all lands, upon the value of the same, estimated as follows, that is to say, land in cultivation, whatever may be the nature of the cultivation, and pasture lands £10 sterling the acre, and uncultivated lands at 10s. sterling the acre, and so in proportion for every quantity of land, more or less than an acre: provided always, that for the purpose of such assessment no fractional part of an acre shall be valued and assessed as less than an acre.

XXV. *Rate on houses, &c., not to exceed 7½ per cent., and on land not to exceed 6d. in the pound.*—Provided always, and be it enacted, That such rate shall not exceed for any one year a percentage of 7½ per centum of the rent or annual value of houses, mines, and quarries, nor the sum of 6d. in the pound of the value of lands to be taken and estimated as hereinbefore directed.

XXVI. *Interpretation of the word "house."*—Provided always, and be it enacted, That for the purpose of this Ordinance the word "house" shall be construed to extend to and include any dwelling-house, warehouse, stable, counting-house, store, shop, workshop, or any building or yard, whether open or inclosed, used or occupied, for the purpose of any trade or business, or for the storage of any produce or lumber or other merchandise, but in the valuation of any house, any building appurtenant to and occupied with such house, shall be included in the valuation of the rental of such house.

XXVII. *Exception of certain houses.*

XXVIII. *On plantations, the dwelling-houses, shops, and rented houses only to be rated.*—Provided always, and be it enacted, That, as regards all lands cultivated or in pasture, the rate hereby imposed on houses shall be

paid only in respect of the principal dwelling-house on any such lands, and any house or building which may be let or used as a shop, or which may be let out for rent, and not on any other house or building on such lands.

XXIX. *Land not exceeding one acre to be excluded in valuation of rental of house.*

XXX. *Annual rent of lands and houses to be fixed by Commissioners. Commissioners to be appointed by the Governor.*—And be it enacted, That for the purpose of ascertaining the annual rent or value of houses, mines, and quarries, and the extent and valuation of lands subject to such rate within each ward, and the names of the owners or occupiers of the same, it shall be lawful for the Governor, from time to time, to appoint such number of fit and proper persons as he shall see fit, as Commissioners of Assessment for each ward, and to allow to such Commissioners such remuneration as he shall see fit, which remuneration shall be paid from the Colonial Treasury on the warrant of the Governor, and shall be charged against and paid out of the funds of the ward.

XXXI. *After first assessment a further assessment to be made every third year.*—And be it enacted, That a further assessment and return shall be made for and in respect of each ward on or before the 30th day of September next after the passing of this Ordinance, and that on the 30th day of September in the year of our Lord 1856, and on the same day of every succeeding third year, a new assessment and return shall be made by the Commissioners of Assessment under this ordinance.

XXXII. *Powers to Commissioners to enter on and survey lands.*

XXXIII. *Commissioner may require persons in possession of any house or land to make a return. Penalty for refusing to make return.*—And be it enacted, That it shall be lawful for any such Commissioner within the ward in respect of which he shall be appointed such Commissioner, to require any person who may be the owner or occupier of any lands within such ward, or the owner or person in the receipt of the rent or any part of the rent of any house within such ward, and also any person renting or hiring any such house or any part thereof, or the attorney or agent of any such person, to make a declaration in writing of the extent of such lands, and the quantity of the same in cultivation or pasture, or of the annual or monthly rent at which such house may be let or occupied, which declaration may be in the form following, that is to say—

Ward of District of County of
18 I, B. B., of do hereby declare that the extent of the lands within the ward of of which I am the owner (or occupier) is acres, whereof acres are in cultivation as cane lands (or cocoa lands) or in pasture, and acres are uncultivated, or (as the case may be) that I am the owner (or occupier, or as the case may be) of the house [insert the local situation or other descriptions of the house], and that the rent payable by (or to) me in respect of the house (or of the upper or lower part of the house) rented by me to (or from) C. D. is at the rate of per annum.

(Signed) A. B.

And any such person who shall refuse or wilfully neglect to make such declaration, or who shall knowingly make any false or untrue declaration, shall be liable to a penalty not exceeding £20 sterling, to be recovered in a summary manner upon conviction before any justice of the peace upon the complaint of the warden.

XXXIV. *Assessment to be signed by Commissioner.*

XXXV. *Persons rated to have access to returns.*

XXXVI. *Justices in Petty Sessions to hear and determine objections to rate.*

XXXVII. *In case of objection, warden to cause survey to be made. Expenses, how to be borne.*—And be it enacted, That in case of any objection to any such assessment, on the ground of any incorrectness in the extent, classification, or valuation of any such lands, it shall be lawful for the warden to cause a survey of such lands to be made by any person whom the warden may appoint for that purpose, and the expenses of the survey, if such objection shall prove to be unfounded, shall be borne by the party making such objection, and may be recovered in a summary manner on the complaint of the warden before a justice of the peace, and if such objection shall prove to be well founded, the expenses of the survey shall be defrayed by the warden from the funds of the ward.

XXXVIII. *Rates to be entered in a rate book.*

XXXIX. *Amount of rate to be paid by persons in possession, and to be a preferential charge on rated property.*

XL. *Proviso—Not to affect agreements between landlords and tenants.*

XLI. *No goods of rated parties to be taken under any execution or assignment without payment first made of arrears of rate.*

XLII. *Payment of rates, how to be enforced.*—And be it enacted, That in case any default shall be made in the payment of any such rate, on or before the 31st day of March, of each year, it shall be lawful for the warden of the ward, at any time after such default, to issue one or more warrant or warrants under his hand, directed to any constable and his assistants; and it shall be lawful for every such constable or his assistants, by virtue of such warrant, to distrain any goods or chattels which may be found in or upon the house, lands, and premises, charged with such rate, or to distrain the person or persons liable to such rate by his or their goods and chattels wherever the same may be found, and the distress so taken to keep by the space of four days at the costs and charges of the party so in default, and if the said party do not pay the amount of such rate within the said four days, then the said distress shall be sold by such constable, or his assistant, for payment of such rate, and the overplus coming by the said distress (if any there be), after deducting the amount of such rate, and also the costs and charges of taking, keeping, and selling, the said distress, which costs and charges, when allowed by the warden, such constable is hereby authorised to retain, shall be restored to the owner thereof; and, moreover, it shall be lawful in such case for such constable or his assistant to break open in the day-time any house upon warrant under the hand of the warden obtained for that purpose.

XLIII. *Parents and guardians of persons under age, and heirs, executors, and administrators of deceased persons to be charged with payment of the rate.*

XLIV. *If no sufficient distress, constable to endorse on the warrant a return to that effect, and return it to warden. Warden to certify all such warrants, and houses, &c., rated, to Court of Intendant.*

XLV. *Court of Intendant to order such houses, &c., to be sold.*—And be it enacted, That it shall be lawful for the Court of Intendant to order and direct all such houses, mines, quarries, and lands, to be put up for sale by the escribano of the Court, at an upset price or sum equal in amount to the arrears of rate due upon the same respectively, and a per centage at and after the rate of £20 for every £100 of the amount of such arrears; and such houses, mines, quarries, and lands, shall be put up for sale, unless the amount of such arrears and such per centage be paid before the day appointed for such sale, on a convenient day to be ordered for that purpose

by the Court, not earlier than three nor later than four calendar months from the date of such order; and the escribano of the Court shall cause to be inserted in the *Royal Gazette* a notice of such sale, specifying the local situation of such houses, mines, and quarries, and the local situation and extent of such lands, the name of the owner or occupiers thereof, and the amount of rates in arrear in respect of the same, together with the time and place at which such sale is appointed to take place.

XLVI. *The house, &c., put up for sale to be adjudicated to highest bidder.*—And be it enacted, That on the day and at the place appointed for such sale, such house, mine, quarry, or lands, shall be put up for sale by the escribano of the Court, and the person who shall be the highest bidder for the same, at a price not less than the upset price at which the same shall have been put up for sale, and shall actually pay down the amount of such price to the Colonial Treasurer, shall be allowed, and shall be the purchaser of the same, and such house, mine, quarry, and lands, shall become the property of the highest bidder for the same absolutely, discharged from all manner of other estates, charges, or incumbrances, whatsoever, save and except debts due to her Majesty, and shall be conveyed to the purchaser by the escribano of the said Court, at the expense of the purchaser, and on such conveyance being executed, a writ of possession according to the form A in the schedule to this Ordinance, shall issue to the warden of the ward in which such house, mine, quarry, or lands, shall be situated, and such warden shall thereupon put such purchaser or his agent into possession of the house, mine, quarry, or lands, so sold.

XLVII. *Balance of arrear of rate and per centage to be paid to person entitled to the same.*

XLVIII. *If no bidder, to be adjudicated to the Queen.*

XLIX. *Distribution of per centage.*—And be it enacted, That of such per centage on the amount of rate in arrear, one moiety shall be paid into the colonial treasury for the use of the colony, and the other moiety shall be paid to the escribano of the Court of Intendant, in lieu of the fees to which he would otherwise be entitled.

L. *Persons resisting Warden or Surveyor-General, shall be guilty of a misdemeanour.*

LI. *Moneys received by warden to constitute a debt to the crown, and if not accounted for, to be made good to the ward from the treasury.*

LII. *Wardens to pay over all monies to Colonial Treasury.*

LIII. *Wardens not to expend more than £10 without the approbation of the Governor.*—And be it enacted, That it shall not be lawful for any warden to expend, or to enter into any contract for the expenditure of, any sum of money exceeding the sum of £10, without the approbation of the Governor first had in writing.

LIV. *All payments to be made by the Colonial Treasurer on warrant of the Governor.*—And be it enacted, That all payments to be made for the public uses of any ward shall be made by the Colonial Treasurer on the order in writing of the warden of such ward for the time being, to be approved by the Governor.

LV. *Moneys to be carried by the Colonial Treasurer to the credit of the ward.*

LVI. *Auditors to be elected annually.*

LVII. *Qualification of voter.*

LVIII. *How auditors are to be elected.*

LIX. *Warden and assessors to determine who are elected auditors, and to publish the names of the persons so elected.*

LX. *Provision in case of death, &c., of auditor.*

LXI. *An account of all moneys received and expended by the warden to be made annually; which accounts are to be audited and signed by auditors, and a copy thereof transmitted to the Governor, an abstract of which is to be published.*

LXII. *Warden to send in annually an estimate of the probable revenue and expenditure of his ward for the ensuing year, with rate to be levied for meeting expenditure. Governor to determine rate.*

LXIII. *Treasurer, on warrant of Governor, to advance moneys necessary for carrying this Ordinance into execution.*

LXIV. *Sum to be appropriated to maintaining royal roads within district of county. Sum to be retained for expenses of general police force.*—And be it enacted, That from and out of the moneys to arise from year to year from the licences to retail spirituous liquors, and from the rates and other moneys to be levied or received in each ward under this Ordinance, the Colonial Treasurer shall annually, and in each year, retain a sum equal to threepence and one-half of a penny in the pound on the rent or annual value to be assessed under this Ordinance, of all houses, mines, and quarries, and to one penny in the pound on the value to be assessed under this ordinance, of all lands in such ward; which moneys shall be applied to the maintaining and repairing of the royal roads within the district of a county in which such ward shall be situate; and the Colonial Treasurer shall also retain from and out of such rates and other moneys a sum equal to one-tenth of the sum to which such rates would amount if assessed at a per centage of 7½ per cent. on the rent or annual value of the houses, mines, and quarries, and of 6d. in the pound on the value of the lands in such ward, and such last mentioned sum shall be applied in aid of the expenses of the general police force of the colony.

LXV. *All moneys received by wardens to be entered in proper books to be open to inspection of inhabitants of the ward.*

LXVI. *Protection of persons acting in execution of Ordinance.*

LXVII. *Proceedings not to be quashed for want of form.*

LXVIII. *In case of actions against wardens, Governor may order the damages and costs to be paid from general funds of the colony.*

Passed in Council, this 1st day of October, in the year of our Lord, 1852.

RICHARD D. CADIZ,
Clerk of Council.

The foregoing Ordinance was duly proclaimed in Port-of-Spain, by me, this 12th day of October, 1852.

EDWARD MURRAY,
Marshal.

IMMIGRATION ORDINANCE.

TRINIDAD. No. 24—1854.
17th November.

An Ordinance

Enacted by the Governor of the Island of Trinidad, by and with the advice and consent of the Council of Government thereof,

To amend and consolidate the laws with regard to Immigration.

CHARLES ELLIOT.

I. *Certain Ordinances repealed.*

II. *Saves entries to labour made in general register of immigrants.*

III. *Interpretation clause.*—And be it enacted, That . . . . the word "immigrant" shall mean all immigrants already introduced, or who may hereafter be introduced, into this colony at the expense of this colony, or for whose introduction, although the same may be under private contract, the colony may hereafter pay bounty; the expression "Indian immigrant" shall mean any immigrant who shall have been introduced from the British Possessions in the East Indies; the word "indenture" shall include all contracts of service declared to be valid by this Ordinance; the expression "indentured immigrant" shall mean any immigrant under such indenture who shall not have completed his industrial residence; and the word "employer" shall mean the proprietor or manager or other person having the direction of or the chief authority upon any estate, plantation, or farm on which any immigrant shall be employed.

IV. *Governor may proclaim ports from which immigration to this colony may be carried on.*

V. *Contracts of service entered into previous to arrival of immigrant on the same being approved and countersigned by the Agent General of Immigrants to be held valid in this colony. Proviso as to signing and attestation.*—If any labourer arriving in this colony from Madeira, the Azores, the Canaries, or the Cape de Verd Islands, or from any part of Europe, or of the West Indies, or of the United States, or of the British Provinces of North America, or from any port or place from which immigration on bounty shall have been permitted by such proclamation as aforesaid, shall before his arrival have contracted with any person to perform service in this colony, such contract shall, when approved and countersigned by the Agent General

of immigrants, and subject to such alterations as the said Agent may, with the consent of the parties, have made therein, be valid in this colony for the full period named in such contracts, not exceeding three years, provided that, except as hereinafter mentioned, no such contract shall be so approved and countersigned unless the same shall purport to have been signed with the names or marks of the contracting parties, and attested by some notary-public or British Consul, or by some other person approved by or acting under the authority of Her Majesty's Government, who shall declare that the parties entered into it voluntarily and with a full understanding of its meaning, nor unless the Immigration Agent shall be satisfied that the immigration has been carried on in accordance with all existing regulations of the Imperial or Colonial Government.

VI. *If contract is not signed and attested, Immigration Agent to report same to Governor.*

VII. *General Register of Immigrants to be kept by Agent General of Immigrants, and mode of keeping such register.*—The Agent General of Immigrants shall continue to keep the General Register of Immigrants, and shall insert therein the names of all immigrants arriving in the colony, and shall number each of such immigrants by a particular number, commencing from the last number already borne on such register, and proceeding by regular numerical progression, and shall distinguish therein, under different heads, the number, age, name, sex, and country of every such immigrant, and the time when, and the place from which, and the vessel in which such immigrant shall have arrived, and the cost of the passage of such immigrant, and whether such immigrant is or is not entitled to a return passage, and the name of the employer or other person at whose expense such labourer shall have been introduced, and of the employer to whom he may be indentured on his arrival, and of the amount of moneys, if any, which may have been advanced to such immigrant previous to his arrival in the colony, and which is to be repaid by him out of his wages in the colony.

VIII. *Agent General to provide food, &c., for immigrants who shall not immediately on their arrival be employed.*

IX. *Agent-general may assign services of immigrants arriving into the colony under contract for service.*—In case any immigrant shall, before embarkation, have consented to enter in the colony into a contract of service with any employer whom the Agent General of Immigrants may on his arrival select, for a period not exceeding three years, such consent being shown either by a certificate of the Government Immigration Agent at the port of embarkation, or by an agreement signed by the immigrant, and witnessed by such notary Consul, or other officer, as aforesaid, the Agent General of Immigrants may assign such immigrant to any employer whom he may think fit, for such period as aforesaid: provided always, that in making such assignment it shall not be lawful for the Agent General of Immigrants to separate husbands from wives, nor children under the age of fifteen years, from their parents or natural protectors: provided also, that no such assignment shall take effect until the employer and the Agent General of Immigrants, on behalf of such immigrant, shall have executed an indenture in the form annexed (Schedule B), or in such other form as may be approved by the Governor, nor until such employer shall have paid on such indenture the fee hereinafter provided.

X. *Agent General may enter on any estate where immigrants are employed for the purpose of inspecting them.*—The Immigration Agent may, at any time during the day-time, enter upon any estate where any immigrants shall be employed, and may inspect the state and condition of such immigrants, and, if requisite, require a muster of such immigrants or any of them as may then

be on the said estate, and shall twice at the least in every year visit and inspect every plantation or place whereon any such immigrant shall be employed.

XI. *Quarterly returns to be made by employers of immigrants to Agent General according to forms to be approved by Governor.*—Every employer of immigrants shall within the first five days on the months of January, April, July, and October in every year make and deliver to the Agent General of Immigrants a return in such form as the Governor may from time to time approve, of all immigrants in his employ or residing on the estate of such employer during the preceding three months, together with the date and cause (as far as the same may be known) of all deaths, and the number of births of the children of such immigrants, and the names of all immigrants who may have left the estate during the quarter, and the Agent General of Immigrants shall keep all such returns, and shall, at the end of every year, make an abstract of the numbers, increase and decrease of all such immigrants, which abstract shall be laid before the Council of Government.

XII. *Penalty for omitting to make return, and for obstructing Agent General.*—Every employer of immigrants who shall omit to make the return hereinbefore required, and every person who shall by any act or omission obstruct the Agent General of Immigrants entering upon any plantation where he may reasonably suppose any immigrant to be employed, or in inquiring into the state and condition of any immigrant, shall, on conviction thereof before any justice of the peace, forfeit and pay such sum not exceeding ten pounds for every such offence, as the convicting justice shall direct.

XIII. *Agent General may cancel indentures in cases of ill-usage, &c.*—In case it shall be made to appear to the Agent General of Immigrants that any immigrant has been ill-used by his employer, or in case of neglect of duty or breach of contract on the part of such immigrant or employer, the Agent General of Immigrants may, by notice in the *Royal Gazette*, cancel the indenture of such immigrant.

XIV. *Agent General may cancel indentures on which fees or moneys payable under this Ordinance have not been paid.*

XV. *Governor may cancel indenture on report of Agent General.*—The Governor may by such notice cancel the indenture of any immigrant if the Immigration Agent shall report that the accommodation provided for such immigrant is bad or insufficient, or if, on any other ground, he shall consider it requisite.

XVI. *Any immigrant whose indenture has been cancelled to be re-indented for the unexpired period of his indenture.*

XVII. *Immigrants introduced at a cost not exceeding £9, and not entitled to a return passage, at the expiration of three years to receive a certificate of industrial residence.*—When the bounty or passage-money paid by the colony in respect of any immigrant shall not have exceeded £9, and the Government shall not be bound to furnish any return passage to such immigrant, such immigrant shall be entitled, after having resided three years in the colony, to demand from the Agent General of Immigrants a certificate of industrial residence, unless it shall be recorded in the office of such Agent General, or shall otherwise appear to his satisfaction, that such immigrant has deserted or been absent without lawful excuse from service, or been imprisoned under the sentence, or by the order of any court of justice, or under the conviction of any justice or justices of the peace, for periods amounting in the whole to more than six days in the three years; and in such case such immigrant shall not be entitled to the said certificate until he shall have further served under indenture for the period or periods of such absence or desertion.

XVIII. *Services of Chinese immigrants may be assigned for a period not*

exceeding five years, but such immigrant may, one month before the expiration of each year of service, signify his wish to be transferred to some other employer. Form of assignment and transfer.—It shall be competent to the Agent General of Immigrants to assign any Chinese immigrant on his arrival for a period not exceeding five years, according to the terms of any contract into which he shall have entered before his arrival in the colony, provided that one calendar month before the expiration of the first and every other year of such period the immigrant may require the said agent to transfer him to some other employer whom such immigrant may select for the remainder of the said period, or on re-payment of all advances made to him before his arrival in the colony and then remaining unpaid, and of £3 per annum for every year wanting to complete five years' residence in this colony to release him absolutely from his indentures, and give him a certificate of industrial residence: provided also that every such assignment and transfer as aforesaid shall be made by indenture as near as may be in the form contained in Schedule B, or such other form as may be approved by the Governor, and such transfer shall be determinable at the request of the immigrant in like manner as the original assignment.

XIX. *Periods for which Agent General of Immigrants may indenture. Proviso.*—It shall be competent to the Agent General of Immigrants to indenture any Indian immigrant who may have been introduced into this colony before the 1st day of January of the year 1854, but who on the expiration of any engagement to labour entered into by such immigrant, and which may be subsisting and in force at the passing of this Ordinance, shall not have completed an actual residence of five years within this colony, for the periods following, that is to say, where such immigrant on the expiration of such engagement shall not have completed a residence of three years within this colony, such indenture shall be for such term as shall be sufficient to make up three years from the time of the arrival of such immigrant in this colony; but where such immigrant shall at the expiration of such engagement have completed an actual residence of three years or more, but less than five years within this colony, then such indenture shall be for one year from the date of such indenture, or such portion of a year as together with the time already elapsed since the arrival of such immigrant within this colony shall not exceed the term of five years from the day of such arrival: provided always that if any such immigrant who may have completed an actual residence within this colony of three years shall pay to such Agent General a sum equal to the aggregate amount of five shillings sterling for every calendar month which at the time of the passing of this Ordinance, or of the expiration of such engagement, if any may be wanting to complete a residence of five years within this colony, such immigrant shall not be indentured, and shall be entitled to receive from the Agent General of Immigrants a certificate of industrial residence.

XX. *Term for which immigrants arriving in this colony after January* 1854 *may be indentured.*—Every Indian immigrant introduced into this colony after the 1st day of January of the year 1854, shall be indentured by the Agent General of Immigrants for the term of three years from the day of his arrival in this colony.

XXI. *Immigrants under indenture for three years or under may, within one calendar month before the expiration of such term, on payment of a certain sum, demand a certificate of industrial residence, &c.*—Every Indian immigrant who may be indentured as aforesaid for the term of three years, or for any term sufficient to make up the term of three years as hereinbefore mentioned, and who shall have completed his service under such indenture, may

at any time not less than one calendar month before the expiration of such term, and on payment to the Agent General of Immigrants of the sum of six pounds, demand a certificate of industrial residence, or he may at any time not less than one calendar month before the expiration of such term signify to his then employer and to the Agent General of Immigrants his desire to be indentured to some other employer whom he may select, and who may be willing to employ him for a period of one year from the determination of his existing indenture, and it shall be competent for the Agent General of Immigrants to re-indenture such immigrant accordingly, and if the immigrant shall fail to make such payment, or to require such re-indenture, his original indenture shall be deemed to be extended for one year.

XXII. *Immigrants may, on paying for unexpired term of service, obtain a certificate of industrial residence.*—Any Indian immigrant whose original indenture shall have been so extended, or who shall have been re-indentured as hereinbefore mentioned, may, at any time not less than one calendar month before the expiration of the year for which his original indenture shall have been so extended, or for which he shall have been re-indentured, and on payment to the Agent General of the sum of three pounds, or the sum of five shillings for every calendar month, which may be wanting to make up a residence of five years within the colony, demand a certificate of industrial residence, or may require such re-indenture as aforesaid, and if he shall fail to make such payment, or to require such re-indenture, his original indenture shall be deemed to be again extended for one year.

XXIII. *Chinese immigrants on completing industrial residence of five years may demand a certificate of industrial residence. Proviso.*

XXIV. *Immigrants receiving certificate of industrial residence may abandon service, &c.*

XXV. *Passports to be granted to immigrants leaving the colony. Penalty on masters of vessels for taking away immigrants without passport.*

XXVI. *Residence of three years presumption of service under indenture; but non-production of certificate* primâ facie *evidence of no service.*

XXVII. *Indian immigrants introduced subsequently to 1st January, 1854, to be entitled to a return passage after a residence of ten years, and on payment of certain moneys towards expenses of such return passages. Provision in case of immigrants introduced prior to January, 1854.*—Every Indian immigrant introduced into this colony at any time subsequent to the 1st day of January of the year 1854, under an agreement reserving to him a right to a return passage, shall be entitled to such return passage on the completion of a residence in this colony of ten years, and on payment by such immigrant to the Colonial Treasurer of such sum, not exceeding the sum of £7 5s. 10d. sterling, as the Governor may from time to time by proclamation direct and appoint, as a contribution by such immigrant towards the expense of such return passage; and every immigrant introduced into this colony at any time before the 1st day of January of the year 1854, under an agreement reserving to him the right to a return passage, shall be entitled to such return passage at the public expense, on the completion of an industrial residence within this colony of five years, under a written engagement to labour, or indenture, or the payment of monthly duties, or other moneys in lieu thereof.

XXVIII. *Provision in case of sickness or accident to immigrants.*—The Governor may authorise the Agent General of Immigrants to grant a certificate of exemption from industrial residence to any immigrant who, from sickness, accident, or other cause, shall appear to him incapable of labour, and may send any such Indian immigrant back at the expense of the colony to the port in India from which he emigrated.

XXIX. *Governor to make rules and regulations respecting immigrants.*

XXX. *Indentured immigrants to labour on plantation mentioned in his indenture for nine hours daily. Proviso.*—Every indentured immigrant, in the absence of any express agreement to the contrary, and except in case of illness, shall be bound to work upon or in the service of the plantation mentioned in his indenture for nine hours of each day, Sundays, Good-Friday, New-year's-day, and Christmas-day only excepted: provided always, that during his inability to labour on account of illness, every such immigrant shall, in the absence of any express agreement to the contrary, receive, instead of wages, such allowances as the state of his health may require, or as may be prescribed by any regulation issued, or to be issued, by the Governor.

XXXI. *Penalty on immigrant absenting himself without lawful excuse.*—Every indentured immigrant who, during the continuance of his indenture, shall, without lawful excuse, absent himself from his work, shall forfeit his claim to all wages and allowances for the time during which he shall so absent himself, and on conviction thereof before any justice of the peace shall for every such offence be imprisoned in the Royal Gaol or nearest authorised place of confinement, with hard labour, for such term, not exceeding fourteen days, as such justice shall direct.

XXXII. *Where immigrant has absented himself or been imprisoned for more than six days during the time of his indenture, Agent General of Immigrants to endorse the same on indenture.*—Where it shall be made to appear to the Agent General of Immigrants that any indentured immigrant has absented himself without any lawful excuse from the service of his employer, or has been imprisoned under the sentence, or by the order of any court of justice, or under the conviction of any justice or justices of the peace, for any period or periods of time amounting in the whole to more than six days, it shall be lawful for the Agent General of Immigrants to endorse on the indenture of such immigrant a note of the time or times during which such immigrant shall have so absented himself without lawful excuse, or been so imprisoned; and such immigrant shall on the expiration of the term of his indenture be bound to work for his then employer for an additional time equal to the time or the whole of the times so endorsed on such indenture, and the term of service mentioned in the indenture shall not be deemed to be completed until he shall have served such employer for such additional time.

XXXIII. *Time during which immigrant is committed for trial shall be an absence without excuse.*

XXXIV. *Where employer of immigrant shall die, &c., persons to whom plantation shall revert shall be entitled to services of such immigrant.*

XXXV. *Power to Agent General of Immigrants or any police constable to stop without warrant any immigrant off the plantation to which he has been indentured, &c.*

XXXVI. *Indentured immigrant may be apprehended without warrant if found during ordinary hours of work off plantation to which he may be indentured, unless provided with a ticket of leave.*

XXXVII. *Penalty on immigrant for fraudulently pretending he has completed an industrial residence, or for lending or counterfeiting certificate, ticket of leave, or passport.*

XXXVIII. *Penalty on masters of vessels receiving or harbouring on board any indentured immigrant who shall not be provided with ticket of leave.*

XXXIX. *Immigrants on completing their term of industrial residence to be entitled to receive from their employer a certificate to that effect.*—Every

employer of any indentured immigrant shall on the expiration of the term of industrial residence of such immigrant deliver to such immigrant, on his request, a certificate under the hand of such employer, that such immigrant has completed the term of his industrial residence, and every employer who shall refuse or fail to deliver such certificate to any immigrant when lawfully requested so to do, shall on conviction thereof before any justice of the peace forfeit to such immigrant such sum not exceeding ten pounds as to the convicting justice shall seem fit.

XL. *Penalty on persons harbouring or employing immigrants indentured to any other person.*—Any person who shall knowingly harbour or receive into or continue in his employment any immigrant then under indenture to any other person, shall on conviction thereof before any justice of the peace, forfeit and pay to Her Majesty such sum, not exceeding twenty pounds, as to such justice shall seem fit, and shall pay to the employer the sum of ten shillings for each day during which such immigrant shall have been so harboured or employed, and complaint of such harbouring or employing may be made by the Immigration Agent or by the employer of such immigrant before any justice of the peace at any time within twelve calendar months after any day on which such immigrant shall have been so harboured or employed.

XLI. *Fees payable to Colonial Treasury on indentures for service.*—There shall be paid to the Colonial Treasurer by the employer of every immigrant during the period of his industrial residence the following fees, viz., on the execution of any indenture two pounds, and at the commencement of the second and every subsequent year of service under such indenture, or any extension thereof, the like sum of two pounds; and where any such immigrant shall on his own request be indentured to any new employer, the sum of three pounds; and all fees payable in respect of any immigrant at the commencement of the second or any subsequent year of service under such indenture shall be taken to be payable and shall be paid unless the employer shall prove to the satisfaction of the Agent General of Immigrants that such immigrant was dead or had absconded from the estate of such employer before the expiration of the previous year.

XLII. *Governor to provide stamps, &c.*

XLIII. *In cases where advances have been made to immigrants, employers are to pay one dollar monthly to Agent General, and may deduct a certain amount of wages monthly for purpose of repaying such advances.*

XLIV. *Moneys payable to Colonial Treasurer to be a first charge on plantation on which immigrants may be indentured.*

XLV. *No writ of* Ca Sa, *&c., to issue against any indentured immigrant.*

XLVI. *In proceedings by immigrants and employers, no fees payable.*

XLVII. *Signature of Agent General of Immigrants to be sufficient proof without the same being proved.*

Passed in Council, this 17th day of November, in the year of our Lord 1854.

RICHARD D. CADIZ,
Clerk of Council.

The foregoing Ordinance was duly proclaimed in Port-of-Spain, by me, this 22nd day of December, 1854.

EDWARD MURRAY,
Marshal.

ERRATA.

NOTE.—The first portion of this work having been printed without the revision of the author, many typographical errors escaped notice; the most important of which, however, will be found corrected in the following Errata.

Page 5, paragraph 3, line 2, for "Galesa," read *Galera*,
,, 5, ,, 3, ,, 7, for "tends," read *trend*.
,, 6, ,, 2, ,, 5, for "Virginia Islands," read *Virgin Islands*.
,, 29, ,, 2, ,, 21, for "from estate to field work," read *from estate, or field work*.
,, 33, ,, 1, ,, 14, for "Bozer," read *Boyer*.
,, 48, ,, 2, ,, 1, for "humanly speaking, and humanly perceiving," read *humanely speaking and humanely perceiving*.
,, 48, ,, 3, ,, 2, for "State man," read *statesman*.
,, 56, ,, 5, ,, 6, for "Sautana," read *Santana*.
,, 59, ,, 2, ,, 9, for "giant influences," read *joint influences*.
,, 73, ,, 3, ,, 11, for "Bocas del Dragonor, the Dragon's mouths," read *Bocas del Dragon, or the Dragon's mouths*.
,, 74, ,, 2, ,, 6, for "Point Tracos," read *Point Icacos*.
,, 77, ,, 2, ,, 9, for "Vassini and Gunpo," read *Vessini and Guapo*.
,, 77, ,, 3, 7 & 8, for "Fossi, Lunapure and Laranuche," read *Foui, Cunapure and Caranache*.
,, 84, ,, 2, ,, 15, for "Malo," read *Mato*.
,, 84, ,, 3, ,, 3, for "Carata," read *Carat*.
,, 89, ,, 2, ,, 13, for "the Yaro," read *Mayaro;* line 17 (and elsewhere), for "Trois," read *Irois*.
,, 89, ,, 4, ,, 5, for "Dr. T. Davy," read *Dr. J. Davy*.
,, 90, ,, 2, ,, 11, for "Desanchos," read *Desenclos*.
,, 95, ,, 3, ,, 14, for "Orcodona," read *Oreodoxa*.
,, 105, ,, 3, ,, 1, for "Laurier or Laurel, Cype," read *Laurier or Laurel-cyp*.
,, 105, ,, 5, ,, 2, for "sum," read *gum*.
,, 107, ,, 1, ,, 15, for "Cane tapes," read *Cane-tops*.
,, 108, ,, 4, ,, 4, for "lancet." read *lancet;*
,, 109, ,, 2, ,, 10, for "Manive," read *Manioc*.
,, 110, ,, 1, ,, 6, for "Mirabilis Talapa," read *Mirabilis Jalapa*.
,, 110, ,, 3, 5 & 6, for "Pap Bark, Paque and Thysalis," read *Pop-bush, Poque, and Physalis*.
,, 110, ,, 5, ,, 2, for "Caleahobata," read *Calea Lobata*.
,, 110, ,, 5, ,, 3, for "Truta," read *Fruta*, and for "Hexandria," *Hexandra*.
,, 114, ,, 3, ,, 2, for "which the kingdom of Trinidad," read *which the animal kingdom of Trinidad*.

Page 116, paragraph 1, line 2, for "laino," read *Cacao.*
,, 119, ,, 3, ,, 3, for "venatus," read *Ornatus.*
,, 120, ,, 1, ,, 10, for "turcatus," read *Furcatus.*
,, 120, ,, 2, ,, 9, for "vedon," read *Eudon.*
,, 124, ,, 1, ,, 14, for "Flatalea," read *Platalea.*
,, 125, ,, 1, ,, 6, for "Suette," read *Surette.*
,, 128, ,, 3, ,, 1, for "when they destroy," read *where they destroy.*
,, 129, ,, 3, ,, 4, for "Calaou," read *Balaou.*
,, 135, ,, 2, ,, 3, for "Sapodilla," read *Savadilla.*
,, 135, ,, 3, ,, 3, for "Muringorin," read *Maringouin.*
,, 135, ,, 5, ,, 4, for "Paton," read *Tatou.*
,, 138, ,, 2, ,, 12, for "Moss," read *mass.*
,, 143, ,, 2, ,, 1, for "Annulida," read *Annelidæ.*
,, 143, ,, 2, ,, 4, for "Talourdes," read *Palourdes.*
,, 146, ,, 5, ,, 8, for "the Sun's rays by radiation," read *the Sun's rays, by radiation, &c.*
,, 149, ,, 6, ,, 5, for "Ramon de Layra," read *Ramon de la Sagra.*
,, 150, ,, 2, ,, 7, for "these," read *that.*
,, 159, ,, 1, ,, 1, for "epidemic," read *endemic.*
,, 178, ,, 3, ,, 9, for "Aliedo's," read *Alcedo's.*
,, 181, ,, 1, ,, 5, for "chapels," read *chapel.*
,, 193, ,, 2, ,, 2, for "Armia," read *Arima.*
,, 193, ,, 2, ,, 3, for "Diego Martici," read *Diego-Martin.*
,, 193, ,, 2, ,, 4, for "Caronia," and "Toro," read *Caroni*, and *Toco.*
,, 193, ,, 2, ,, 5, for "Blanchivense," read *Blanchisseuse.*
,, 193, ,, 2, ,, 6, for "Erici," read *Erin.*
,, 195, ,, 2, ,, 2 and 3, for "Maranas" and "Diego-Martici," read *Maraccas* and *Diego-Martin.*
,, 196, ,, 2, ,, 4, for "Scripture, history, the four rules," read *Scripture history, the four rules.*
,, 207, ,, 3, ,, 5, for "Warder's," read *Wardens'.*
,, 226, ,, 1, ,, 7, for "Before me, J. S. Burke," read *Before me, T. S. Bushe.*
,, 230, ,, 3, ,, 4, for "In quarrying at the Mora forest," read *in quarrying, at the Mora forest.*
,, 239, ,, 1, 4 & 7, for "Careenage and Cimaranero," read *Carenage and Cimaronero.*
,, 239, ,, 1, ,, 8, for "Funere," read *Turure.*
,, 239, ,, 1, ,, 19, for "Orapuche, Guapa," and "Trois," read *Oropuche, Guapo*, and *Irois.*
,, 240, ,, 3, ,, 5, for "Advances made over each ward," read *advances made, over each ward.*

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